

COMMERCIAL CAR JOURNAL

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EDITORIAL CONTENTS

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FEATURE ARTICLES

Expander Rings Give Engines an "E".....	38
Maintenance Memos from a Specialized Fleet.....	40
The Industry Problem Before Employers and Employees.....	49
Another Test to Identify "White Metal" Bearings.....	50
Check-Up the Oil Pump Against Pressure.....	51
Operating Changes for Better Bearing Life.....	52
Ford Truck Electrical Circuit Change for Better Starting.....	53
PM Points from a Meat Fleet.....	54
Low Temperature Cast Iron Welding.....	56
A Guide to Giving Veterans Their Jobs.....	60
A Fleet Operator's "Fifth Wheel" Invention.....	61
Aluminum Now in Stock for Bodies.....	62
The New Essentiality List for Tire Replacements.....	65
New Wide Base Rim Increases Tire Mileage.....	70
Steel-Ribbed Floor Strengthens Trailer Chassis.....	70
Easy Power Shift on Timken 2-Speed Axle.....	72
New Timken Hydraulic Brake.....	74
Truck Operator Aids State Safety Campaign.....	136
Gen. Somervell Praises War Job of Trucks.....	150
Hell Develops New Twin Arm Hoists for All Dump Truck.....	180
Walter Four Point Positive Drive Tractor.....	180

DEPARTMENTS

Washington Runaround.....	35
Editorials.....	37
Shop & Salvage Hints.....	42
The Gripe Department.....	46
Free Publications.....	58
New Products.....	59
CCJ Newscast.....	76
CCJ Quiz.....	80
ODT News.....	164
WFB News.....	173
OPA News.....	176

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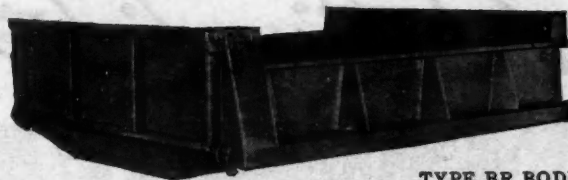
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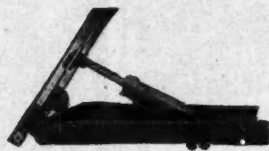
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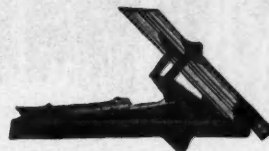


TYPE BR BODY

Side-braced contractor's dump body. Note "loose link upper hinge and pin assembly," box shaped corner posts and heavily braced box type tail-gate.



DIRECT LIFT HOISTS
Models 36, 36-7 and 37. St. Paul's three Direct Lift Hoists feature low mounting heights. Dumping capacities from 1½ to 3 yards.



DOUBLE ARM HOISTS
Models 46, 47-7, 47 and 53. Low mounting Double Arm Hoists furnished in four sizes for bodies 7' to 11'.

**PROFITS GO HIGHER
WITH ST. PAUL EQUIPMENT**

There's no profit in equipment that is tied up for repairs. Through 32 years, contractors, engineers and dealers have known St. Paul units for long life with a minimum of repairs or replacement.

ST. PAUL HYDRAULIC HOIST CO.

MINNEAPOLIS 14, MINNESOTA



TYPE 654 BODY

Heavy duty contractor's body built over two heavy I-beams. Husky side-braces. Standard 7' to 12' lengths. Standard 5'-6" to 7' widths.

HEAVY DUTY HOISTS IN THREE SERIES— ALL ADAPTED TO TYPE 654 BODY

MODEL 95 HOIST derives tremendous lifting power through lever action on lifting arms. 10 inch cylinder. Dumps loads up to 10 yards.

MODEL 85 HOIST, similar in design to the Model 95, is used with bodies up to six yards capacity.

MODELS 6 and 7 HOISTS feature powerful wedge-roller action and high dumping angle. Capacities, six to eight tons.

ST. PAUL HEAVY DUTY HI-DUMPERS (For Major Rock and Earth Removal.) Extremely high dumping angle (70°) of these Models 92 and 102 Hoists raises body past its center of gravity, but don't worry. It can't tip! St. Paul Hydraulic check prevents shock and Power Down feature quickly returns body to its original position.

Type 673 Rock Body, capacities 4 to 10 yards, is made of ¼" plate with I-beam braces around the outside. Scoop end permits increased load, dumps clean with load unobstructed.



Putting fighters in fighting trim...



OFFICIAL U. S. NAVY PHOTO

Service for Internationals at a South Pacific Base

PLENTY of fresh air here, where servicemen of the 33rd Construction Battalion of the Seabees put fighting trucks in fighting trim. This maintenance shop isn't much like an International service station at home, but the men, tools and work are America's own—skilled representatives of America's might.

International Trucks with the Seabees, like Internationals everywhere, are all-truck trucks. Every part and fitting is made for one purpose—stalwart truck performance. These trucks are

brothers under the hood of the International Half-Tracks that are fighting on foreign fronts, powered with the same famous International Red Diamond Engines.

International Trucks are rugged. Their stamina and dependability at war and at home explain why—in the 10 years before the war—more heavy-duty International Trucks were sold than any other make.

INTERNATIONAL HARVESTER COMPANY
180 North Michigan Avenue Chicago 1, Illinois

INTERNATIONAL Trucks



New Trucks—Now! The government has authorized the manufacture of a limited quantity of trucks for essential civilian hauling. International is building

them in medium-duty and heavy-duty sizes. See your International Dealer or Branch now and get valuable help in making out your application. Don't delay!



WASHINGTON RUNAROUND

102,000 Tires for September

In spite of the Government's venture into truck operation in the Mid-West, the crisis in large-size truck tires continued to hold the center of the stage in Washington throughout August. While reports of trucks down for lack of tires had not yet added up to alarming figures, it was recognized that the real danger lay ahead. Every effort was being made to provide relief. Somewhere the Office of Rubber Director dug up 25,000 tires and raised the August quota from 60,000 to 85,000 in sizes 8.25-20 and up. This department was informed that the September civilian quota would be upped to 102,000 tires. The increased quota represented confidence that production would improve. In truck operating circles this was viewed with some skepticism. It was felt that production could not increase so rapidly, and that there would be a recurrence in the issuance of "hunting licenses." Guided by the new WPB tire essentiality list (published in full elsewhere in this issue), and with the help of ODT advisory operator panels, OPA boards were screening tire applications with great care in an effort to place the available tires where they were most vitally needed.

Black Market in Tires?

The loudest and most persistent complaints continued to come from

102,000 Heavy Tires for September . . . Black Market in Tires? . . . ODT Embarrassed . . . \$5,000,000 to Operate Truck Lines . . . 1100 Army Truck Directives . . . Only 80,000 Trucks for ODT in 1944 . . . '45 First Half: 113,410 Trucks . . . Shop Equipment Appeals Pile Up . . . Etc.

by **GEORGE T. HOOK**

tank truck operators. Telegrams were piling into the Tank Truck Section of ODT from petroleum haulers in all parts of the country. Although they held a preferred classification in the new tire eligibility list, scores of petroleum haulers were reporting trucks out of service due to their inability to get tires. It was predicted that by the end of August, unless relief were provided, 20 per cent of the petroleum tank trucks in over-the-road service would be laid up. In units this would be around 3000 trucks. The carriers were behind in their hauling commitments. It was admitted that only a large sea-going tanker movement was safeguarding the nation from an oil crisis. Some of the carriers raised the spectre of a black market in the larger size tires. They reported that tires were available in their localities but that they refused to pay \$140 for a 10.00-20 tire that had a ceiling

price of \$105. A proposal was advanced that for the duration of the crisis the OPA system of allotting tire quotas by districts be discontinued in the case of large-size tires; that production be frozen in the hands of tire manufacturers, and that shipments of large-size tires be made in line with the granting of certificates. It was hoped this would eliminate maldistribution and make sure that the tires got to where certificates were waiting for them. The difficulties of such a system were appreciated and the ODT hierarchy did not appear disposed to press the proposal before WPB.

ODT Embarrassed

Indeed, from an overall standpoint, events to date were cause for ODT embarrassment. As the claimant agency for civilian truck tires before WPB, the ODT has held to the

(TURN TO PAGE 36, PLEASE)



WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 35)

estimate that the minimum monthly requirement for the third quarter is 165,000 tires in the 8.25-20 and up sizes. If this estimate is correct, the cancellation of more than 100,000 tire certificates in the hands of operators and the greatly lowered August quota should have caused great hardship in the motor transport industry and tens of thousands of trucks should now be out of service for lack of tires. Instead, the out-of-service reports account for about 5000 trucks and even ODT doubts the accuracy of this total. Since the ODT allowed for a greater degree of tire conservation due to better maintenance and recapping than in pre-war days, its claim for 165,000 tires monthly is a conservative one that should reflect rock-bottom needs of truck operators. So far this is not the case and ODT is at a loss for an explanation. Either tire conservation has exceeded all expectations or tire inventories in the hands of operators have been greatly under-estimated. It is still a source of wonder in ODT that beer trucks, which long have been ineligible for new tires, can even today be seen with tires that look as if they had just come out of wrappers.

Tire Inventory Surveyed

OPA was reported to be making a survey of tire manufacturers and the trade in order to determine the

inventory of 8.25 and up tires. No one ventured to speculate on the results and there were those who doubted that, at this stage, the results would give an accurate picture.

\$5,000,000 to Operate Lines

When the President issued his directive taking over the 103 Mid-West, strike-bound, for-hire truck lines, ODT assumed the job of Government operation with a smoothness and dispatch that gave no indication of the uneasiness that was felt by its personnel. ODT was fortunate in having at the head of its Property Operations Division Ellis Longenecker, a man experienced in the motor haulage business. To him was entrusted the job of operating the strike-bound lines. With a \$5,000,000 bank account, made available from the Government's emergency fund, Mr. Longenecker set up in business in St. Paul, Minn. Almost immediately his job was made easier when all but one of the operators (at the time this was written) agreed to co-operate with the Government, and the strikers returned to work. Business is going on as usual except that the employees get the 7 cents an hour wage increase for which they struck. The increase was made retroactive by the War Labor Board but the back wages will be paid by the Government only if the operations show a net profit. The operators refused to abide by the WLB order, claiming that the wage increase and other benefits granted employees would put their operations in the red. The accounts led with the Interstate Commerce Commission will be scrutinized by the entire industry with more than ordinary interest to check on Government efficiency.

1100 Army Truck Directives

Behind in truck production scheduled for the first half of this year, and with second-half schedules staring them in the face that were twice as large as the unmet first half, truck manufacturers finally got a chance to tell their story to the big shot of the Army Service Forces—General Somervell. He called them to Washington ostensibly to put on the heat. In a meeting that was amicable in every respect, some of the heat was blown back in the General's face. In polite terms he was reminded that

aside from the manpower problem in the foundry industry, Army policy itself was responsible for the shortage of military trucks. He was reminded that the Army's standardization policy had hamstrung the truck industry's potential productive capacity. The General could not and did not deny the soft impeachment. From there the meeting proceeded to constructive measures, chief of which was an order placing heavy military trucks in a priority class with aircraft, and giving manufacturers the privilege of applying for directives to procure critical parts that were holding up production. The importance of the move and the state of affairs became apparent in the first two weeks following the meeting when the truck manufacturers requested 1100 directives.

There was no certainty that directives for expediting heavy truck production would provide the military trucks scheduled. The production of medium military trucks, previously well up to schedule and at times even ahead, was reported falling behind. The belief was expressed that directives would be required for both medium and light military trucks if 1944 schedules were to be met.

Only 80,000 for ODT

With military trucks enjoying the directives, what were the chances that the 1944 civilian truck program would be fulfilled? Among manufacturers there was sentiment that civilian trucks also would require directives. In ODT sentiment waxed equally pessimistic or perhaps it was just realistic. Expectations there were that only 80,000 of the 101,000-odd trucks in the civilian ODT program would be produced this year.

'45 First Half: 113,410 Trucks

Still apparently undecided because of the course of events in Europe the military authorities late in August had not yet indicated to WPB the extent of their 1945 truck requirements. So WPB played safe and set the second quarter civilian program at the same figure as the first, 56,705 trucks. By types, the 1945 first half civilian program is as follows: 80,000 medium trucks, 26,732 light-heavy trucks, and 6678 heavy-heavy trucks. That adds up to a first half total of 113,410. It compares with a 1944

(TURN TO PAGE 182, PLEASE)

EDITORIALS

A Common Cause Deserves a Common Effort

HIGHWAY transportation interests have long been aware that railroads have been successful in promoting and preserving anti-truck laws largely because of the support given them by their employees in influencing the vote of state legislators. The various brotherhoods in which these employees are unionized have made restrictive truck legislation a common cause with railroad management. Their joint activities in some State Legislatures have been scandalous and have outraged public opinion. But they have been successful in gaining their ends to the extent that laws affecting motor trucks are a hodge-podge; have created trade barriers that cost the public millions of dollars annually, and have restricted the full development of motor transport.

There is no doubt that in cooperating with railroad management in opposing motor trucks the railroad employees have felt that they were protecting their own jobs. This is a selfish, short-sighted, unsocial attitude but it is something that truck interests must recognize as inevitable and must engage in efforts to counteract.

Up to the present time legislative cooperation between employers and employees of the truck industry has not been on the scale existing in the railroad industry. Only in a few states is there even a semblance of such cooperation. One of the chief reasons, of course, is the fact that employers and employees have been too much at odds over wage scales and working conditions to be able to get together on such matters of common interest as restrictive truck legislation and punitive regulations. Animositities arising from the clash of personalities have blinded both sides to the wisdom of working together on leg-

islative matters which affect the future well-being of both.

There are hopeful signs that in the new era, upon which the nation will enter with the end of the war, things may be different. A significant sign is the attitude of organized labor in the truck industry. Its leaders are taking an initiative which, in the nature of employer-employee relations under existing conditions, rightly belongs to them. Significant in itself, and typical of this new attitude (at least we hope it is typical) is the statement on the need of legislative cooperation by Dave Beck, vice president of the International Brotherhood of Teamsters, which was made before operator members of the Washington Motor Transport Association, and which is published elsewhere in this issue.

"Competing types of transportation," said Mr. Beck, "must stop appealing to the ignorance and prejudice of uninformed legislators and congressmen to injure our industry; they must be prevented from using chicanery to erect barriers that impede the free flow of commerce on the nation's highways. The barriers that have been erected must be removed for they do not permit fair and open competition; they do not serve the public interest; they are detrimental to public welfare. There is no legitimate excuse for the destructive practices that the representatives of the railroads have adopted to block honest competition.

"We must develop the kind of policy, by our common efforts, that will stop such nefarious proceedings in our legislative halls."

It is a task that requires our "common efforts," in fact anything less will make more difficult and protracted the task of influencing the

public and legislators that restrictive truck legislation is not in the public interest.

By making remedial legislation a common cause, organized truck operators and organized truck employees can by "common effort" untie the bonds that have hamstrung the industry. The bringing about of this "common effort" deserves the immediate attention of labor and management leaders. The task of educating employees to participate in the "common effort" is a tremendous one. It requires organization and it requires financing. It should be undertaken without delay.

Justice, at Last

AN event that should soften public opinion and make it more receptive to the truck industry's "common effort" is the anti-trust suit just filed by the Department of Justice against the American Association of Railroads, the Western Association of Railway Executives and 47 individual railroads.

The Department of Justice alleges a great many malefactions against the railroads in its 39-page complaint, but it brings into full public view one charge that previously has not received adequate national attention, although it has been the subject of investigation by a Congressional committee. The charge is that

"... the defendants have established an organization called the Highway Department within the Western Association of Railway Executives, that the declared purpose of the Highway department is to retard the development and growth of the trucking industry, particularly in the long-haul field, in the Western part of the United States, and that this has been and is being accomplished by various methods, including concerted action by the railroads to cause the enactment of state laws restricting the development of the trucking industry."

The evidence developed to substantiate this charge should weld a bond between employers and employees in the truck industry and strengthen them in the resolve to delouse State legislative halls of the pernicious influence of railroads.

EXPANDER RINGS

Give Engines an "E"

THE major problem always facing the repair mechanic is one of deciding whether a given engine should be reconditioned or overhauled. It is always uneconomical to "over-repair" engines, and in wartime it can be doubly uneconomical and can cause unnecessary demand for scarce replacement parts. A committee of the Society of Automotive Engineers has studied the phenomena of engine cylinder and piston wear, together with the repair practices of large commercial vehicle fleets, where engines are regularly reconditioned and overhauled. This committee has made certain recommendations and suggestions to guide the repair mechanic in deciding whether to recondition an engine's cylinders with expander-type piston rings, or rebore the cylinders and fit new pistons and plain rings.

The SAE Committee stresses the fact that expander-type piston rings are not a cure-all and that they will not compensate for other bad conditions in an engine. However, if the cylinder walls are smooth though worn tapered or out-of-round within certain limits, and where the crankshaft system and bearings are in proper order, and the engine operating conditions are satisfactory, good results can be obtained with expander-type piston rings. Economies in labor and material are thus possible. Care is needed in both the initial analysis of the degree and type of wear of the cylinder walls and in the installation of the expander rings in order to produce satisfactory results.

After consideration of the various operating experiences investigated, the committee reported summaries of



**... for Efficiency when they are installed
in accordance with recommended practice;
prolong the period between overhauls and
get more service out of cylinder blocks**

cylinder-wear data, which can serve as a guide on piston reringing work. (See summary in adjoining columns under the heading "When to Install Expander-Type Rings.")

The data collected by the SAE committee demonstrate the value of expander-type piston rings in the conservation program of the Office of Defense Transportation. Some of the advantages to be derived from expander-type rings are:

1. They compensate for cylinder wear so that the time between engine overhauls is prolonged.

2. They increase the usable service mileage from cylinder blocks by a very appreciable amount.

3. Expander-type piston rings of the segmental design practically eliminate clogging, except under extreme cold engine temperature conditions, where excessive sludge is formed. They derive their effectiveness from the independent action of the segments, and from the wide drainage openings incorporated in their design. This keeps the rings free to function for prolonged periods, under rigorous conditions.

WHEN TO INSTALL EXPANDER-TYPE RINGS

After detailed study the SAE Committee on "The Use of Expander-Type Rings to Prevent Excessive Cylinder Reconditioning" made the following observations and recommendations:



In Medium and Large-Size Engines (Above 260 cu. in.)

- a. Plain rings did not effectively compensate for cylinder taper above 0.006 in., whereas reringing with expander-type rings resulted in successful operation above 0.006-in. cylinder taper.
- b. A cylinder taper of about 0.016 in. was reported as a maximum economical limit at which expander-type rings could be expected to function successfully, both in local and over-the-road service.
- c. A cylinder taper of 0.020 in. is not too great to prevent expander-type rings from performing satisfactorily for a limited period. The installation of expander-type rings in cylinders with so great a taper is not recommended except in special cases, such as, absolute necessity to return a vehicle to service when new pistons are unavailable, or when a vehicle is to be retired from service within a short time.



In Small Engines (Below 260 cu. in.)

- a. For units in the small-engine classification, operating in either local or over-the-road service, it is practical to rering with expander-type rings with cylinder taper of less than 0.012 in.
- b. Some engines in this class, operating under severe conditions, are subject to general deterioration of running parts at such a rapid rate that expander-type rering practice is not economical. Instead, reboring with more extensive replacement of parts is required.

4. Expander-type rings, because of their longer effectiveness, reduce ring sticking caused by over-oiling and blowby, which in turn would result in oil oxidation and corrosion of bearing surfaces.

5. The analysis of certain truck operating experience indicated that expander-type rings cannot be used as a remedy in overcoming operating conditions beyond the function of this type of ring. As an example, where abnormally low temperature operation is encountered, accompanied by extreme rate of en-

gine wear, a means of raising operating temperatures should first be installed before the benefits of any type ring can be realized. Piston rings of any type likeness cannot be expected to remedy undesirable operating results caused by excessively worn or badly fitted bearings, badly worn valve guides, scored or rough cylinder walls, worn pistons, and other unsatisfactory conditions.

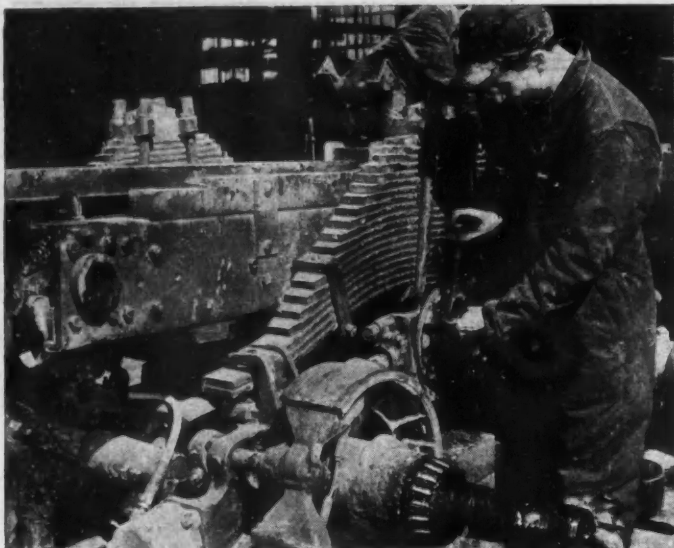
Piston Ring Fundamentals

Plain, non-expander-type piston rings are intended and designed for

use in straight and round cylinder bores. Essentially such rings have equal radial pressure distribution, and a radial thickness dimension usually close to the S.A.E. standards. A further characteristic of these rings is that, when compressed into a cylinder, they have sufficient resilience to exert their own inherent pressure against the wall without assistance.

Plain rings lack the flexibility to conform with worn cylinder-wall conditions. i.e. conditions in which cylinder walls are no longer straight and round. The principal function of the expander, or inner spring, is to overcome these conditions. The purpose of the expander is to exert independent pressure against the ring, forcing it to conform to variations in cylinder-wall contour within the area of ring travel.

There was a time when steel expanders were bought as a separate item, to be installed in piston-ring grooves behind plain rings after cylinder wear progressed to the point at which plain rings were no longer able to cope with the existing conditions. Results from such combinations were not always satisfactory. Piston groove depths varied considerably, so that the amount of clearance between the back of the ring and the bottom of the ring groove was an unknown quantity. Moreover, there was seldom sufficient room for an expander, so that excessive ring-wall pressures were developed when expanders were applied in this manner. This condition made it very difficult to crank the engine, and resulted in excessive cylinder-wall wear that was directly traceable to the
(TURN TO PAGE 126, PLEASE)



As much of Belyea's equipment is of special design and construction, skilled men are needed for maintenance



The shop is well equipped with modern, efficient tools and equipment. Pneumatic tool, above, assures tight nuts

★ Maintenance Memos ★ From a Specialized Fleet

BELYEA TRUCK CO.
PACIFIC CRANE & RIGGING, INC.
ROAD CALL REPORT

Equipment No. _____ Date _____

Operator's Name _____

Location of Equipment _____

Operator can be reached at Telephone No. _____

Employee receiving call _____ Time _____ A.M. P.M.

Name of Mechanic sent out _____ A.M. P.M.

Time leaving shop _____ P.M. Arrived at breakdown _____ A.M. P.M.

Time Truck left place of breakdown _____ A.M. P.M.

Time Mechanic left Truck _____ P.M. A.M. P.M.

Time arrived back at shop _____ A.M. P.M.

Operator's Report of trouble _____

Mechanic's Report of trouble found _____

If Operator used in making repairs, how long _____

O.K. _____ (Shop Supt.) _____ (Mech. Supt.)

MECHANICS attach repair order to this report with their back. Report W. Belyea

Belyea's 5½x8½-in. road call report has been found very efficient. Note that complete trouble details before and after each road call are required

Belyea Truck Co. out on the West Coast reports on its handling of wartime replacement parts, stresses regular PM inspections and tosses in a few of its diesel practices

by EARL N. SENTER

Mechanical Superintendent, Belyea Trucking Co. and Pacific Rigging Co., Los Angeles, Cal.

WE make no regular line hauls. Equipment waits until called upon to do a job. It may be to move a 75-ton oil refinery reaction tower, a 100-ton transformer, the forepeak or the deckhouse of a Victory ship. Or just a routine cargo of pipe. Maybe the big whirly, that once hung a cameraman over Pictureland's set for "Gone With the Wind" is needed on a special job where its 80-ft. boom is the only "boarding-house reach" that fills Mr. Industry's needs. It matters not.

Twenty-four hours of the day, every day, we stand by. Everything is ready for *any call* that may come in.

That means equipment. Not only the run of the mill, but specially built, too. The kind for our particular type of heavy move and lift. We've been told there's no other outfit just like the combination of Belyea Truck and its sister company, Pacific Bigging, working over the highways anywhere else in the world. Whether this is so is not important. Our purpose is to do the difficult hauling and



SHOP DEPARTMENT			
Please make the following repairs:			
Equipment No.			
Speedometer			
Motor			
Brakes			
Lights			
Transmission			
Clutch			
Miscellaneous			
Date	Time	A.M.	P.M.
Is truck safe to drive in present condition.			
Driver			
SHOP			
Shop Superintendent O. K.			
Date Completed	Time	A.M.	P.M.

[illegible]

Repairs are handled on a work order basis. Left: Specimen of form used. Above: Reverse side of job order form

city traffic these create hazards and slow up movement. Some power units with trailers may cover 1000 to 2000 miles per month, others run up a total of 12,000 miles. There's nothing uniform in this business. Each day brings a different problem. Each of the problems calls for a different effort.

Because of the wide mileage variance, it is necessary to use time as well as mileage as a basis for our maintenance work. For this work the average staff is 55 to 60 men for both companies, all consolidated in one shop. Equipment yards are adjoining but to avoid congestion are separated. By having one shop force, maximum effort with a given number of men is the result by bringing in the units from both companies to one central maintenance base.

Central maintenance mechanics are our preference. However, at the present time, we cannot always obtain them, and we are running at least five men short. Assignments are made to the specialized jobs—motor, transmissions, electrical, tire, sheet metal and body work. Welders, general mechanics, machinists and helpers make up the balance. Experienced maintenance mechanics are needed.

rigging jobs—anything—anywhere—anytime—and with safety. For that purpose, at the present time, we are using about 425 pieces of all types of rolling and self-moving equipment.

These include 57 road tractors, 30 heavy trucks, 27 crane trucks with an engine each for motive power and hoisting, and five heavy duty track-laying cranes. The balance is made up of lighter trucks, passenger cars, trailers, and low-bed semi-trailers for the real lugging. Tonnage capacities

range from 25 tons to 120 tons, though loads up to 135 tons have been hauled on single pieces of equipment. And much heavier, of course, on multiple units.

Annual tonnage figures reach as high as one million transported with a total monthly fleet mileage of 500,000. But mileage is not so important in our type of operation. This is because a great part of our movements are at a very slow pace with frequent stops and delays due to extra height and extra length. In

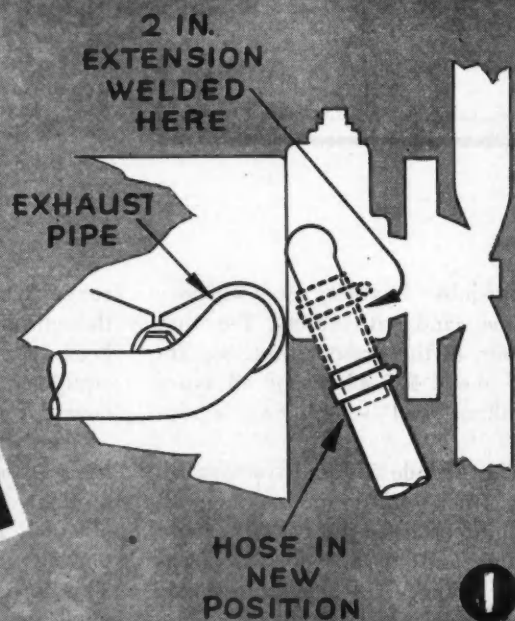
\$5

Commercial Car Journal will pay \$5.00 for acceptable shop hints and \$5.00 for unusual parts salvage tips. Send in as many ideas as you have to the editor. Don't underestimate your ideas. Let the editor be the judge. A photograph or a rough sketch and simple explanation in your own words are enough. CCJ will polish them up for publication. Use this opportunity to earn extra money to buy more War Bonds to "Back the Attack."

SHOP & SALVAGE HINTS

It takes skill and mechanical ingenuity to keep fleets rolling these days. Here are 10 men who have distinguished themselves with ideas that brought results.

1. Prolonging Water Hose Life
by F. W. Green
2. Insulated Dry Ice Box
by Daniel F. Pond
3. Folding Canvas Gate
by L. E. States
4. Non-Skid Pedals
by W. M. Heil
5. Hand Brake Accessibility
by Tom Bowdish
6. Hood Hold-Down Device
by George Raymond Gould
7. Starter Gear Repair
by G. E. Upperman
8. Emergency Brake Repair
by John M. Kavanagh
9. Reverse Gear Latch Repair
by W. J. Dowd
10. Fuel Pump Valve Repair
by Budd Shaulis



1. Prolonging Water Hose Life

by F. W. Green
The Cook & Brown Lime Co.
Oshkosh, Wis.

The water hoses from the pumps to the lower radiators on several of our Studebaker cab forward trucks were so close to the exhaust manifold that they became burned from the heat and required frequent replacement.

We welded a two-in. extension to the water pump, as shown by the accompanying sketch. This keeps the hose sufficiently far away from the exhaust manifold to prevent burning and thereby prolongs the life of the hose.

2. Insulated Dry Ice Box

by Daniel F. Pond
General Baking Co., Hartford, Conn.

We have constructed an insulated box for dry ice which we use for contracting cylinder sleeves for easy replacement. Its principal advantages are that it provides more even temperature distribution and reduces the cooling time.

The box itself was made from a one-in. soft wood board dressed to $\frac{3}{4}$ in. It can be constructed as large as desired. Ours, designed to hold four sleeves, measures 13 x 13 x 11

in. deep. Inside dimensions are $9\frac{1}{2}$ x $9\frac{1}{2}$ x 9 deep. One in. cork insulation was placed flush on all sides. The insulation for the top is not flush with the lid but cut so that it fits snugly within the box. Galvanized sheet metal covers the insulation.

When doing a sleeve replacement job, we place the square of dry ice in the box, stand four sleeves on them and close the lid for 20 minutes. After this period the sleeves are removed and inserted into the block with the aid of a hard wood cylindrical driver. As one sleeve is taken out of the box, it is replaced by another until the job is finished.

3. Folding Canvas Gate

by L. E. States
Scott Bros., Inc., Philadelphia, Pa.

We have been unable to secure metal folding gates for the backs of some of our trucks to replace those which have outworn their usefulness from age or that have been damaged beyond repair. Because these trucks are used for parcel deliveries in the city area it was necessary to have some kind of gates. We made up a number of folding canvas gates as shown by my sketch.

All construction data is shown on

the sketch. Since only every other section contains a wood slat, the gate folds back very nicely. This type of gate is not hard to make, is much better than a wood panel gate would be for our purpose.

4. Non-Skid Pedals

by W. M. Heil
Gulf Refining Co., Louisville, Ky.

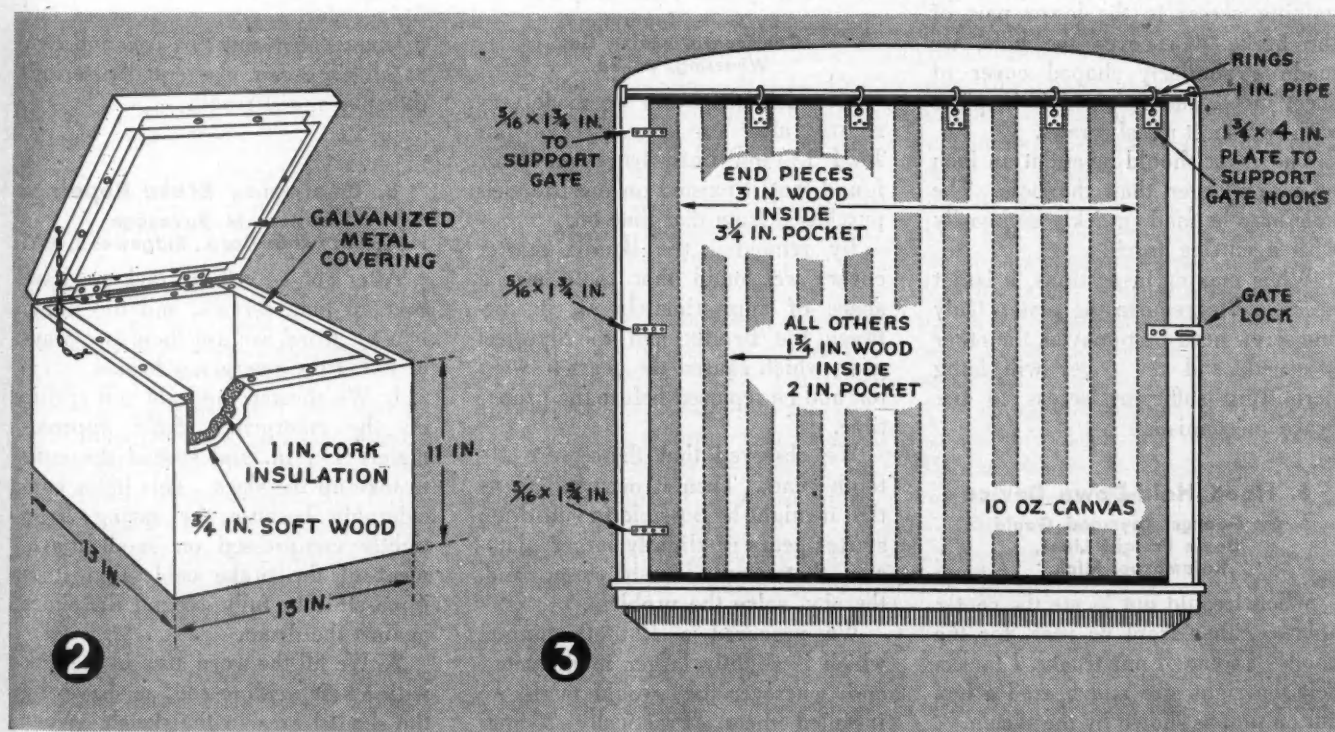
Some of our cars and trucks were originally equipped with rubber pedal pads. Since these are hard to get, and some non-skid protection is required for safety, we resorted to welding to provide a safe, non-slip surface.

We used arc welding, as we found it best and fastest. We spot-welded each pedal in zig-zag fashion, about $\frac{1}{8}$ in. high and filed off all unnecessary roughness. This has proved very satisfactory.

5. Hand Brake Accessibility

by Tom Bowdish
Washington State Highway Department
Tacoma, Wash.

Occasionally it is necessary to replace the quadrant and pawl on the emergency brakes of some of our (TURN TO NEXT PAGE, PLEASE)



\$5

Commercial Car Journal will pay \$5.00 for acceptable shop hints and \$5.00 for unusual parts salvage tips. Send in as many ideas as you have to the editor. Don't underestimate your ideas. Let the editor or your judge. A photograph or a rough sketch and simple explanation in your own words are enough. CCJ will polish them up for publication. Use this opportunity to earn extra money to buy more War Bonds to "Back the Attack."

SHOP & SALVAGE HINTS

(CONTINUED FROM PAGE 43)

c.o.e. trucks. Owing to the inaccessibility, this takes at least two hours.

We have shortened the time to one-third hour by cutting an oval-shaped hole, four by six inches, through the inside of the front fender, thereby gaining access to the lower part of the brake. To cover the hole, we made a similarly shaped cover of sheet metal, and fastened it in place with two sheet metal screws.

The cover should be about an inch or more larger than the hole. The hole may be made quickly and easily with a cutting torch.

When making inspections, it is not necessary to remove the plate. Only one screw need be removed, the other loosened, and the cover will hang permitting sufficient access to the brake mechanism.

6. Hood Hold-Down Device

by George Raymond Gould
Doyle Freight Lines,
Kalamazoo, Mich.

When I could not locate the center holder, either front or rear, for the hoods of some of our trucks, I took a bolt the right size and brazed a hex nut on top, as shown by the sketch.

Inserted in the center rod of the hood, it served the purpose as good as the original part.

7. Starter Gear Repair

by G. E. Upperman
Continental Baking Co.,
Wheeling, W. Va.

Here is a discovery we made very shortly after our purchase of our 1934 1½-ton Ford trucks, and we found that it existed on most models purchased from that time on.

By removing the Bendix starter cover, we found that there was a space of approximately ⅛ in. between the Bendix and the flywheel gear, which caused the gears to wear out and be replaced before the proper time.

We observed that these were 10-tooth gears. Then it occurred to us that it might be possible to substitute starter gears of slightly larger diameter that would mesh closer and, thereby, solve the problem.

We procured a 12-tooth pinion, which is slightly larger in diameter, and, wherever they would mesh, we installed them. Practically 75 per

cent of our fleet was in need of this larger gear, and since their installation, we have never had to replace a band.

In making this change-over, care should be exercised not to force the fit, as starter gear engagement and disengagement must be free and easy at all times, or else equally serious difficulties will result.

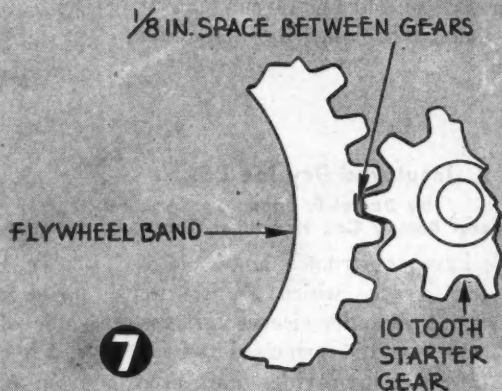
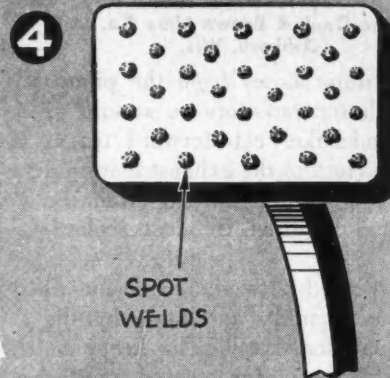
8. Emergency Brake Repair

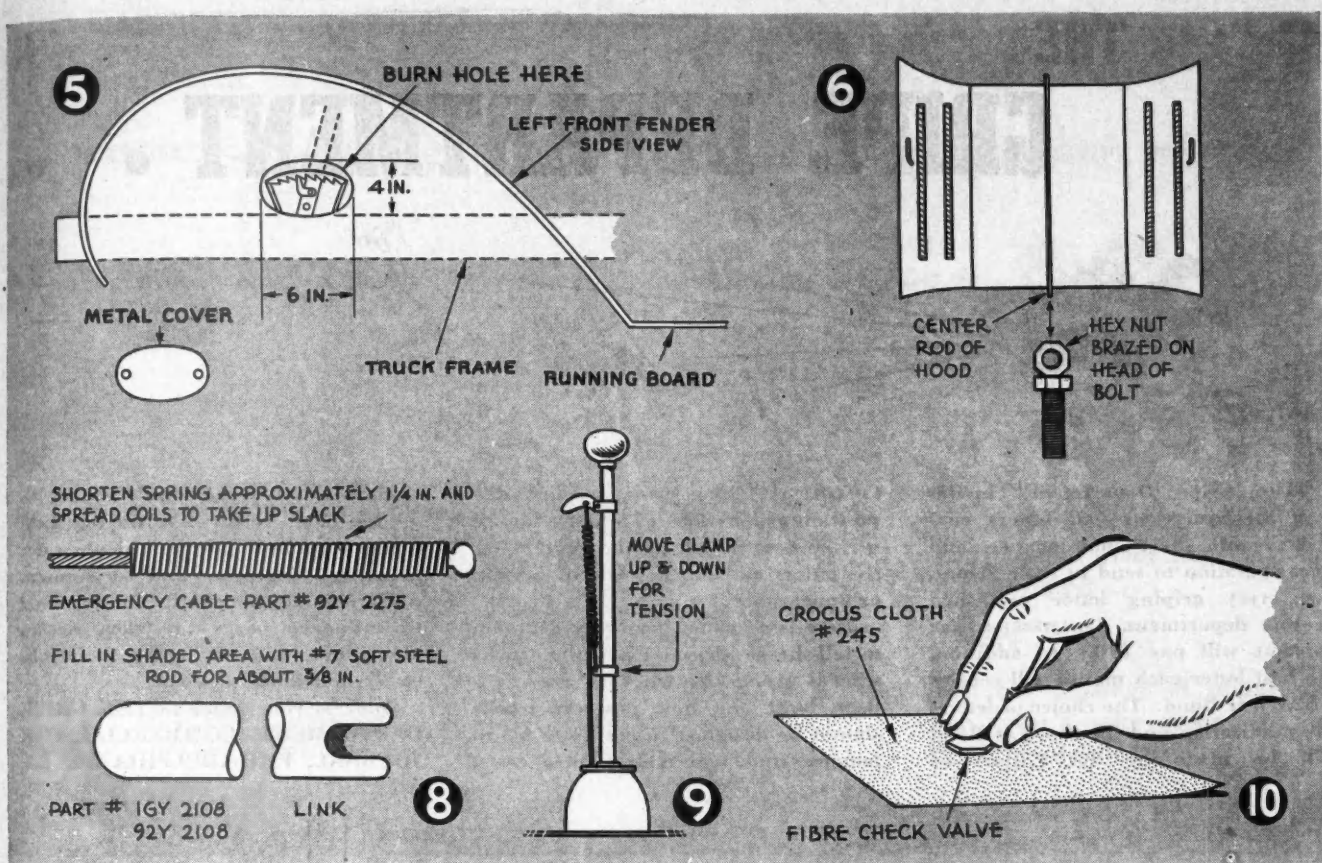
by John M. Kavanagh
Hegeman Farms Corp., Ridgewood, N.Y.

After our 1-ton Ford pick-ups have been in long service, and the lining is a bit worn, we use these two ways of fixing the emergency brakes.

1. We shorten the light coil spring on the emergency cable approximately 1¼ in. and spread the coils to take up the slack. This helps considerably because the spring is so tightly compressed on small movement of the brake cable that it is impossible to fully expand the shoes against the drum.

2. We fill the worn area in the link with a soft welding rod, as shown by the shaded area in the sketch. Wear





at this point is very fast, especially in stop-and-start service, because there is no lubrication at this point.

The amount of steel welding rod filler to be used naturally should be governed by the amount of wear noticed at this point in the link. Our experience with a number of these links shows that about 3/8 in. should produce satisfactory results.

New lining and drums are not affected by these changes, and the emergency brake will hold tight and release immediately when desired.

9. Reverse Gear Latch Repair

by W. J. Dowd
Winchester Highway Department
Winchester, Mass.

To make a quick and permanent repair on a reverse gear latch, where the spring is broken, we make a small clamp to go around the shift lever. Then we take a broken carburetor spring and hook one end around the bolt that holds the clamp and the other end around the rivet in the latch bracket.

To provide proper tension, we move the clamp up or down as required.

10. Fuel Pump Valve Repair

by Budd Shaulis
Continental Baking Co., Norristown, Pa.

When rebuilding fuel pumps, we naturally want to repair them so that they will hold the vacuum and pressure as long as possible. We have purchased a number of kits from different manufacturers and find that the fibre checks will not hold the pressure or vacuum as well as they should. We have discovered that this is caused by the high glaze on the check surfaces, although, once in a while, the checks themselves may not be perfectly flat.

Now, in every fuel pump rebuilding job, we remove this glaze by placing the check on a piece of Crocus Cloth No. 245 and rubbing it in a circular motion. In case any of the checks should be warped, as occasionally happens, this procedure also will remedy the fault.

Checks to test the efficiency of this repair can be made easily by placing a new check valve with glaze and one after resurfacing into the same or separate fuel pumps. The readings on the pump with the glazed check valve will drop back on the gage

right away, whereas the resurfaced checks will hold the reading for several seconds.

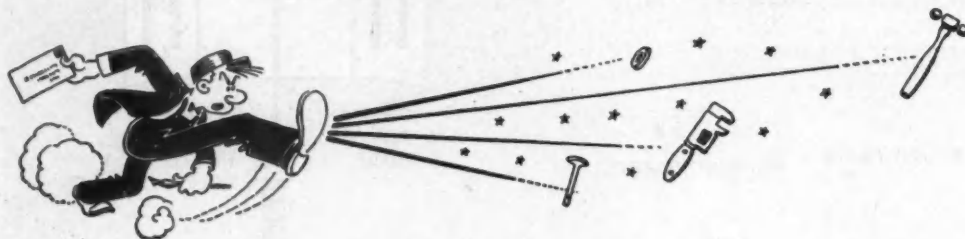
Another method of checking the effectiveness of glaze removal is to take off the top of the gas filter and pour a half teaspoon of gas on the check valve. Then hold the thumb over the pump outlet to the carburetor, and pump the arm on the fuel pump. Where the glazed check valves are installed, it will be noticed that the gas seeps out between the fibre check and the seat the instant the pumping action stops. When the resurfaced checks are given a similar test, it will be observed that they will hold for several seconds before seepage starts.

Of course, the removal of the glaze on the fibre checks will not take care of cases where the check valve seat requires resurfacing.

Until the glaze removal was tried, we used to wonder why starting was not greatly improved after fuel pumps were rebuilt. About a year ago, we tried removing the glaze and the results were so good that this is done automatically on every pump rebuild job we do.

THE

GRIPE DEPARTMENT . .



"The Gripe Department" invites fleet mechanics and all others connected with fleet maintenance and fleet operation to send in their gripes. For every griping letter published in this department, COMMERCIAL CAR JOURNAL will pay \$10. In addition, the best letter each month will receive a \$25 War Bond. The choice of letters for publication and for the War Bond will be made by the Editors of

COMMERCIAL CAR JOURNAL. Their disposition of letters will be final. Choice will be determined by the content of the letters and not by style of writing or appearance.

Here is a chance for every fleetman to tell the designers of post-war trucks what is wrong with trucks as they have been built and how post-war trucks should be designed to cut down maintenance time and maintenance costs.

Here is every fleetman's chance to get his ideas over to all of the big shots in the truck industry; presidents, sales managers, engineers and servicemen.

Here is an opportunity for fleetmen to influence post-war truck design along lines that will make their jobs easier and more pleasant.

Address your letter to THE GRIPE DEPARTMENT, COMMERCIAL CAR JOURNAL, PHILADELPHIA 39, PA.

Parts Data on a Plate



\$10

THE GRIPE DEPARTMENT,
DEAR SIR:

In regard to your "Gripe Department" I think that the parts men who service parts for the heavy-duty equipment have one of the best there is. It seems as though our life is made up of asking "what make, what model, what serial number?"

If at all possible in the new post-war models the manufacturers should make a plate on the dash of the equipment large enough so that it could contain the following information, the make, model, serial number and if a custom built truck such as Kenworth, Peterbilt, and Sterling they should put on the plate the model of front axle, rear axle, transmission so that we could properly fill requests for parts.

This plate should be put in front of the driver so that he could not miss seeing it at all times, so that he would know what kind of equipment

he was driving and all facts for obtaining parts in case of a breakdown.

ROSS WILLOH,
Chas. W. Carter Co., San Francisco, Cal.

Delivery Truck Design \$10

THE GRIPE DEPARTMENT,
DEAR SIR:

Why should one-third of the length of a delivery truck be used by the engines and controls?

Why is the engine always lengthwise, and in front?

Our trucks are loaded and unloaded from the side, so the rear doors are left locked.

The newer bus designs have the engines crosswise, at the rear. This allows:

- lower floor level . . . equals . . .
- less driver fatigue
- more room for load . . . equals . . .
- . . . more pay for driver
- greater height from floor to roof . . . equals . . .
- . . . more comfort for driver in working load.

Our drivers make about 200 deliveries and collections, and we have always specified smaller wheels to cut down on the "step up" getting back into the truck.

The smaller wheels are a help, but truck design (from the delivery viewpoint) is wrong at this time.

As the pioneering and experimental stage of rear engines is past, why can we not use the experience to improve delivery conditions? It would cost more to use these obsolete high floor buggies than to buy the new trucks at double present prices.

Which maker is most likely to lead the way?

It cannot be too soon, as these will have custom-built bodies for the first year's production.

STEPHEN WILKINS,
Wilkins Smallware Co., Ltd., Toronto, Ont., Canada.

Tool Kit—A Waste \$10

THE GRIPE DEPARTMENT,
DEAR SIR:

We have often heard that here in America there has been a great deal of material waste. The war has brought out this fact and we have had and will have salvage drives on various types of material throughout the country. This waste does not apply to any particular group, but I believe it affects civilians, business people and manufacturers alike.

The war is teaching us here at home not to be wasteful, but I am afraid that after the war we will all go back to our old habits again.

My particular "Gripe" at this time is in regard to the tools furnished

COMMERCIAL CAR JOURNAL WILL PAY

\$10

FOR EVERY GRIPE PUBLISHED

AND each month one of the Gripes will receive an extra award of a

\$25

WAR BOND

For Mechanics, Foremen, Superintendents, Supervisors—in fact all connected with the maintenance and operation of fleets, who want designers to give more thought to making post-war trucks easier to maintain and repair and less costly to run

READ . . .

the letters on this page and you'll get a clear idea of what it's all about . . .

THEN . . .

pull out a sheet of paper and for gripe's sake gripe and get paid for doing it!

with new trucks by the manufacturers. To me, these tools have in general been a waste. These tools as a rule have been the cheapest that a manufacturer could buy, but not the best. The pliers and screw driver would be used once or twice and then thrown away as scrap. Many of the jacks furnished by the manufacturer were of poor construction, and not of sufficient capacity to lift a portion of the loaded truck to insure real safety while changing tires or making certain repairs. Plenty of drivers have cursed some of these jacks. The open-end wrenches have been fairly good but not the best and the monkey wrench would be in the same class as the pliers and screw drivers. The grease gun furnished in most cases could just as well be taken home in the original package and given to the wife to use as a cookie machine.

This can all be summed up in one word—waste. I believe that most fleet owners or individual truck owners would rather pay a few dollars more for the original equipment and be assured of getting the best tools obtainable. It would save the owners time and money, and avoid waste.

EINER R. FISCHER,
County Highway Commissioner, Racine, Wis.

Lights, Switches, Wiring, Etc.



\$10
AND
\$25
BOND

THE GRIPE DEPARTMENT,
DEAR SIRs:

I would like to let our a few "pet gripes" concerning one phase of truck service that usually should take but a few minutes to perform but sure seems to eat up man-hours. Namely, lights, switches, instruments and their mountings; wiring and connections and electric gages in general.

I believe heavier gage materials should be used in head, tail, clearance and cluster lights to withstand the continual vibration due to heavy springing, plus constant exposure to the elements.

One large c.o.e. manufacturer mounts the headlights by one bolt through the back of the shell to the bracket which in turn is bolted to the frame by the same bolt that holds the front end of the cab. The headlight protrudes half through the cab panel

and is dressed up by a heavy rubber grommet, between shell and panel. Constant movement of the body eventually break the shell mounting.

I braze the mback together and leave the grommet off, which allows clearance and prevents a recurrence. The headlight grounds through the body bolt which invariably works loose so it is necessary to use a good ground wire from headlight to frame.

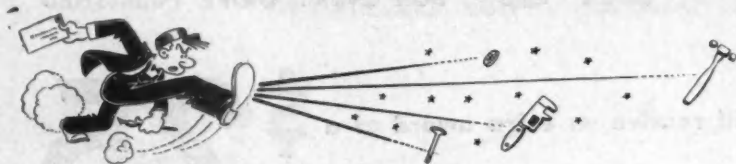
Too few factories place tail lights on tractors and trucks where they won't get knocked off in a short time. If they don't, the weather rusts them so badly lens retaining screws can't be removed without breaking off, or the threaded bracket inside is electric spotted so lightly it breaks loose.

Maybe the light is out because of a poor ground, caused by the center contact button spring becoming rusted and losing its tension fails to push the bulb lugs into the socket securely. Surely heavier springs would go a long way to eliminate this trouble. Post-war parts might be plated or of a rust-proof material. Clearance lights, of course, constantly give trouble after being in use for a short time.

Brass sleeve bayonet type contacts don't seem to remedy the trouble, as springs are much too light to stand
(TURN TO NEXT PAGE, PLEASE)

THE

GRIBE DEPARTMENT



(CONTINUED FROM PAGE 47)

up very long. Some headlights use this type of plug. A poor contact causes heat which soon takes all the spring tension and out goes the headlight, which in some cases means removing the headlight to renew the plug. After replacing the light more time is added to properly focus and align, which should be done with the outfit loaded, which isn't always handy.

Headlight wiring and connections throughout the circuit are another source of trouble that could be corrected with heavier wire, and in some cases save material. Some of our outfits were double wired with armored cable of much too light a gage to handle sealed-beam lights. It was replaced with 12-gage wire, with a saving in material and keeps lights up to par in intensity.

Dimmer switches could be made heavier and the contacts riveted better to get away from voltage drop. Some type of lubricant packed into the lever switching mechanism and stem will make them easier and more sure to operate. I have packed new and old switches with Bendix brake lubricant and lengthened the life considerably.

Just try to get some of these switches out without removing the floor boards, which sure can consume plenty of time. Maybe post-war headlights will be operated by a solenoid switch actuated by a light meter set to dim headlights upon meeting oncoming cars' headlight rays and switching back to hi-lights automatically as long as light rays are below a certain intensity.

Fuse block connections are much too light to handle the average circuit and after replacing several fuses chances are the clip rivets are loose enough to cause voltage drop.

Dash light switches of the riveted and bayonet type construction grad-

ually corrode or jiggle loose, and cause considerable hunting and testing to correct dimming lights, as do sleeve type bayonet connections. Many times in trying to detach the sleeve the end pulls off of wire, due to poor soldering or resistance in the circuit which caused heating.

If the gentleman who designs cab dash boards and instrument panels had to stand on his head to replace some of the more delicate gages he would allow more room or see that more durable gages were installed. To install heat, oil, fuel or ammeters and not bend the hand several degrees can be quite a chore to a mechanic who is used to handling heavier objects, and he knows it before he is through. Surely more room could be allowed in the individual gage case to remove and replace units.

If the dash is placed far enough from the fire wall to get behind it, a brace bar or glove compartment or ventilator handle cuts down the workable space to cramped quarters.

Behind the dash is a maze of wires which, when new, are very pretty and evidently installed with the hope nothing ever would go wrong or else "out of sight, out of mind" because certainly much hasn't been done in the last decade to remedy a bad situation. In fact due to more gages the space is more congested.

Ignition switches need heavier contacts and fibre plates to prevent arcing and subsequent bad connections.

Most States require turn signals. Extra switches are needed on semi-trailer units for clearance and fog lights, heaters, etc., but in each case it's an individual installation job. An accessibly-placed, sturdily-built junction plate would aid considerably in installing the units.

To hook up vacuum or air systems on most tractors is another "by guess

or by gosh" job but, then, that is another story.

In general, heavier units are necessary to correct most of these problems, units placed in a reasonably accessible position, and allowances made for accessories needed but not installed at the factory.

Surely increased cost in manufacture would be more than offset by the lower cost of upkeep for this phase of service. Lower cost service on any unit means dependable service, which certainly boosts any manufacturer's product and reputation.

Maybe I won't see this in print but I've got it off my chest so maybe I'll feel a bit better after letting off a little steam.

CLAIRE E. ELLSWORTH,
Mechanic, Ellsworth Sales Co., Interstate Trucking, Eagle Grove, Iowa.

A Variety of Gripes



\$10

THE GRIBE DEPARTMENT,
DEAR SIRs:

After reading the "Gripes" sent in by others, I feel I have some to add to them.

I am convinced that if some of the car manufacturers were to make jugs they would make them with the necks on the inside.

I maintain a variety of trucks and firmly believe that some, if not most, of the parts could be standardized. The outlying garages don't carry such a wide selection of tools to service so large a variety of trucks and cars.

Why can't a transmission be made so it would not be necessary to remove the motor or rear end to remove same. Also why not make it so the shafts and gears can be removed without the removal of the transmission?

Why not make a larger hood? On some units the hood opening is so small that a large man just don't get under it; or should all mechanics be small men?

I find on one popular light delivery truck that it is next to impossible to add oil to the crankcase without re-

(TURN TO PAGE 147, PLEASE)



The Industry Problem Before Employers & Employees



DAVE BECK

THERE are so many problems confronting our industry, in performing our war-time duty to our country, that it will require every ounce of vitality,

our keenest vision and our best judgment, to bring us through the trying days of the struggle and to measure up to our responsibility to the nation.

We must understand our responsibilities: we must realize the strategic part that we will play in promoting the welfare of our country. We must discharge that responsibility in such a manner that in the performance of our serious work we will not only strengthen our industry but also bring a full realization of its value into every community in America. We must shape the conduct of our every-day work on the highways so that we can transport the war materials, the implements of destruction, and the life-saving medicines and life-sustaining foods, by the millions of tons.

Excerpted from an address originally delivered at the annual conference of the Washington Motor Transport Association.

A call for a cooperative effort to counteract destructive practices of railroads and to win for trucks the right to serve fully

by DAVE BECK

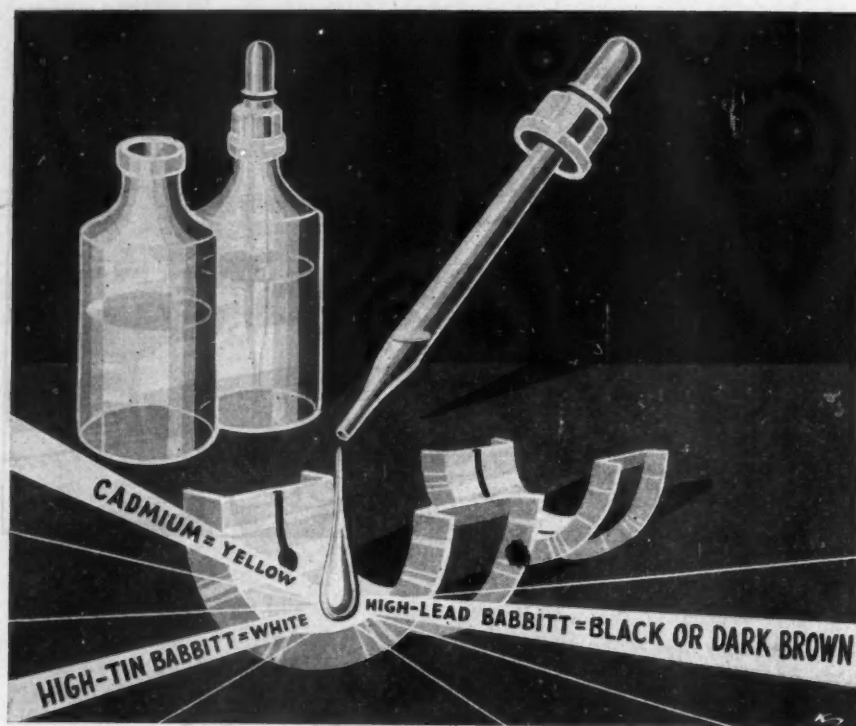
Vice President, International Brotherhood of Teamsters

We will deliver these precious cargoes in freezing weather and in boiling sun. We will traverse roads decked in ice, as well as those which plunge through dangerous, fog-bound lowlands. Our trucks and their drivers must struggle over mountain passes, brave torrential rainstorms and sun-baked deserts, to pour a gigantic flood of freight into the ports of embarkation. We must haul the raw materials from mill and mine, and, when they are shaped into the completed products to further our war effort, we must deliver them to rail-head, ship-side and training camp.

We must explore every avenue of sound business procedure, while performing this all-important task for our government, to the end that we may earn our rightful reward of public confidence and that America will understand that our industry is a great national asset in time of war as well as in time of peace.

We must awaken our state legislators and our congressmen to the essential part that this industry is playing in the development of America. They must be made to understand the necessity to protect it,

(TURN TO PAGE 98, PLEASE)



Another Test to Identify "White Metal" Bearings

**Bureau of Standards recommends simple test
to help fleet operators determine if bear-
ings are cadmium, high-tin or lead babbitt**

Ed. Note—In the June, 1944, issue Commercial Car Journal published three tests for identifying "white metal" bearings. Here is a fourth test, devised by the U. S. Bureau of Standards:

THE predominating metal, either cadmium, tin or lead, in "white metal" engine bearings can be identified by simple, non-destructive chemical tests. The techniques of the test are simple.

The chemicals can be purchased through any drug store or chemical supply store. The chemicals can be handled and stored best in two- or three-ounce bottles, each equipped with dropper-type stoppers. The bottles with droppers can also be pur-

chased at the chemical store. Separate droppers are needed for each solution.

The chemical solutions used are:
No. 1. Glacial acetic acid—50 per cent distilled water solution.

No. 2. Sodium sulphide—50 per cent distilled water solution.

Test Procedure

The procedure of the test is simple and is as follows:

1. Wash the bearing surface to be tested with clear gasoline, stoddard solvent, or alcohol, to remove all grease, oil, or surface dirt.

2. Wipe surface clean and dry with a clean dry rag.

3. Place one drop of the No. 1 solution (acetic acid solution) upon the bearing surface near the end of the bearing (see illustration No. 4).

4. Allow drop of No. 1 solution (acetic acid solution) to stand for 10 to 15 seconds.

5. On the drop of No. 1 solution place a drop of the No. 2 solution (sodium sulphide solution).

6. a. If bearing is **CADMIUM**, the chemicals will turn **YELLOW**.

b. If bearing is **HIGH-TIN BABBITT** the chemicals will turn **WHITE**.

c. If bearing is a **HIGH-LEAD BABBITT** the chemicals will turn **BLACK or DARK BROWN**.

7. After observing the color of the chemicals and identifying the base metal of the bearing, wash off the chemicals thoroughly with water and wipe the bearing dry. Bearing and back can then be coated with oil to prevent rusting of the back.

8. Bearing can be used in an engine, if this method is followed, as any slight etching which may occur will occur near parting line of bearing in area of least pressure.

Cautions

a. Keep droppers clean and always return to proper bottle so as not to mix the chemicals.

b. Use only one drop of each chemical to avoid splashing chemicals on the steel backing.

c. Date the bottle labels, as the chemicals should be replaced after about three months of use.

Notes

a. If the chemicals are permitted to stand on tin babbitt for several minutes the first white reaction color may darken because of the small amount of lead in the high-tin babbitt.

b. If no reaction or color change occurs when the drop of No. 2 chemical is applied, it indicates that the chemicals have lost their strength and should be replaced.

Copper-lead Bearings

No chemical tests are suggested for copper-lead bearing, either plain, indium plated, or lead-coated, since by lightly sandpapering a short section of the *edge* of the bearing, the typical copper color can be observed through a low-power magnifying glass.

OIL serves two purposes in an engine. One is to lubricate the bearings and cylinder walls and the other is to cool the engine bearings. The limiting factors in regard to engine bearing life are pressure, speed and temperature.

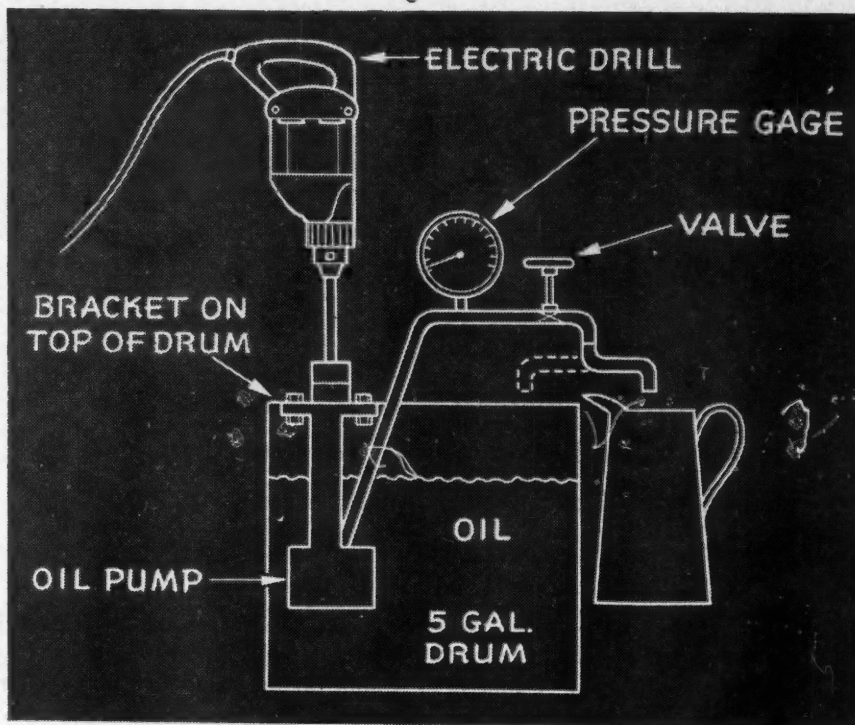
If the temperature of babbitt bearing could be kept at about 100 deg. F., it is very likely that babbitt bearing would be satisfactory for any of our automotive type engines. However, from the nature of mobile equipment this is not possible so that crankcase oils do reach high temperatures.

In so far as cooling of the bearing is concerned, the cooling is a product of the temperature of the cooling oil and the amount of cooling oil that circulate through the bearing. In other words, a large amount of warm oil supplied to a bearing may keep its temperature low enough so that it will give satisfactory service, whereas just enough oil supplied for lubrication may permit the bearing temperature to rise to such a degree that bearing failure will result.

Assuming that there is ample, moderate temperature oil in the crankcase, there is a problem of being sure that oil is circulated copiously to all the bearings. A good many years ago when only plain piston rings were available, one had to be quite careful of the oil throw-off from the crankshaft, because the piston rings were not able to take care of the extra burden of wiping down too much oil. Now with improved piston rings, one can be a little more generous with the amount of oil which is thrown up into the cylinders.

Oil pumps should be tested against pressure at the time of every engine rebuilding. The fact that an oil pump will deliver oil against no pressure is not indicative of its working condition. A simple fixture can be shop made on which oil pumps can be tested. The illustration gives a schematic arrangement of a pump testing outfit. In this case a half-inch electric drill is used to drive the pump. With a half-inch electric drill the pump is driven at 500 R.P.M.

The engine manufacturers can supply the approximate delivery values of specific model pumps at this pump speed. Within certain limits, gear pumps have a straight line relation between capacity and pump speed, so that slight errors in



Check-Up the Oil Pump Against Pressure

In coping with the bearing problem a good circulation of oil should be assured; home-made set-up provides two important tests

R.P.M. will not produce gross errors in delivery, and if a capacity value is obtainable only for a thousand R.P.M., it can be assumed that the delivery at 500 R.P.M. will be in the neighborhood of half that at 1,000 R.P.M. Practically, a shop standard can be set by testing a number of either new or reconditioned pumps.

Two tests should be made with this set-up. First, there should be a measure of the delivery against the standard oil pump pressure. This is done by closing the valve until standard pressure is indicated on the gauge. Then with the pump still running, swing the return pipe out of

the drum and into a two- or four-quart measure and observe the time required to fill the measure. The results can be compared with the manufacturers' standards to indicate the condition of the pump. Second, the valve should be shut off entirely and the maximum delivery pressure should be observed. If the pump is in very good condition it will be found that shutting off the outlet will come very close to stalling a half inch electric drill and a pressure of around 150 P.S.I. is possible. If the shut-off pressure is much below this point or much below standards which

(TURN TO PAGE 69, PLEASE)

Operating Changes for Better Bearing Life

Suggestions dealing with such related factors as oil temperature, wartime fuels, engine speed and lubricants are made by ODT

OPERATING factors which have an effect on the life of engine bearings are: Oil Temperatures, Wartime Fuels and Detonation, Engine Speed and Lubricants. The following suggestions for coping with these factors to produce longer life of bearings have been made to Maintenance Advisory Committees by the Maintenance Section of the ODT Highway Transport Department.

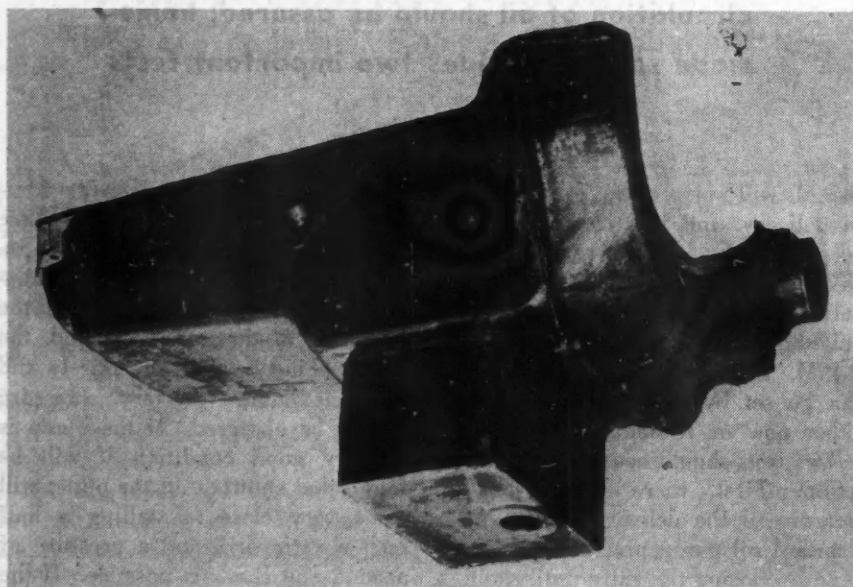
Crankcase Oil Temperatures

A number of cases have been reported, particularly in over-the-road and bus equipment, where auxiliary oil reservoirs have been applied to engines with small capacity crankcases with an outstanding improvement in bearing life. This has been

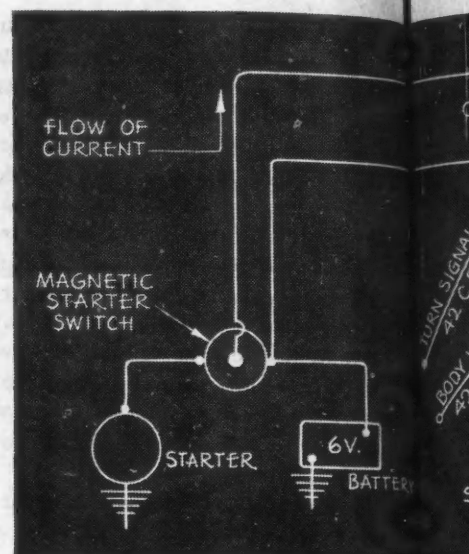
done in two ways: one by the addition of a separate tank connected by tubing to the crankcase and oil circulating system, and the other by an enlargement of the oil sump by welding on an extension.

In most cases where a change has been made the crankcase capacity has been increased from 6 qt. to 10 or 12 qt. and sometimes more. The results of this increase in crankcase capacity have been twofold: the additional oil capacity for engines which are on long runs reduces the possibilities of the engine running out of oil, and the additional container has added cooling surface to the oil reservoirs and has resulted in a reduction in the overall oil temperatures. This

(TURN TO PAGE 132, PLEASE)



Illustrating how crankcase capacity may be increased by welding extension to oil sump. Cooling surface of reservoir is increased, possibility of engine running out of oil is reduced



Wiring diagram above shows the stand-

Ford Truck

FOR a number of years I have been an electrician for a large Philadelphia dairy. Occasionally, I'd get a chance to do some electrical work on some of the milk trucks, and was I surprised to see what a hit-and-miss job of electrical wiring is installed on these trucks. I had always worked with the higher voltages—110 to 5000—where proper regard is maintained for such things as the correct size wire and switch required to carry the right ampere and voltage. If this is important for the high voltages, it stands to reason that it should be equally important, if not more so, for the low voltages where trucks are in stop-and-start service and where numerous accessories may or may not be employed.

If the truck manufacturers gave as much care and attention to the 6-volt wiring in their trucks as they give to the higher voltage in their plants, I am sure there would be less electrical trouble on the trucks.



"IT'S ALL IN WRITING"

Peter Eckrich & Sons' fleet PM program is charted along definite lines which, from experience, have been found to conserve not only the vehicles but tires and parts. Detailed, written procedures have been worked out for all personnel.

Tire maintenance, for example, is based on 14 specific points dealing with all phases from keeping valve caps on all tires to recap procedures. Some of the points covered in the article are, in brief:

"Use ribbed tread design for

fronts and trailers, non-skid grip for rear wheels.

"Put new tires on country routes, and older on city trucks.

"Do not use vulcanized tires on country runs . . . brand these tires with the words, 'City only'.

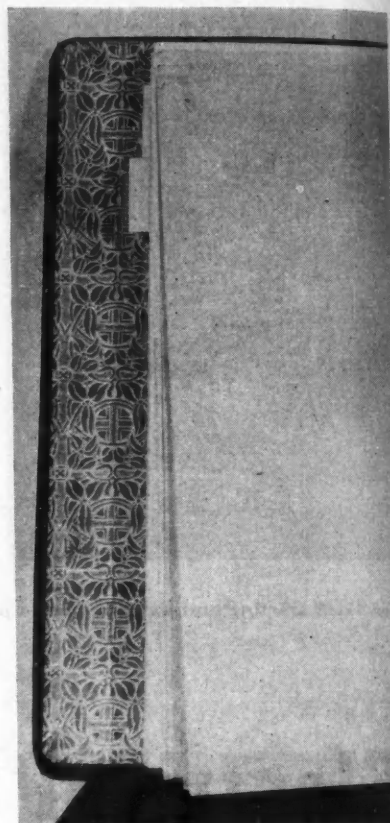
"Turn casings in for recaps when ribbed or non-skid design disappears from about two-thirds the distance across the driving surface of the tread."

Details of these pointers, as well as of the entire PM program, are covered in the article. There's much meat for any fleet.

Personal Safety Instructions for Mechanics

1. Never depend on jacks or chain hoists alone to support a car you have to work under. Block it.
2. Use only electric extension lamps and portable electric tools with cords and fittings that are in good condition.
3. Be sure your feet are clear of passing automobiles or moving machinery when you get under a car.
4. Guard against carbon monoxide gas from the exhausts of running. See that there is proper ventilation.
5. Do not have gasoline standing around in open containers. Use kerosene or other relatively safe preparations to clean parts, whenever possible.
6. Use safety grip (thumb not around handle) when necessary to crank engines by hand.
7. Don't attempt to lift anything too heavy for you. Get help or use a hoist.
8. Watch the wrenches and other tools you use. Keep them free of oil and in safe working condition.
9. Keep a pair of safety goggles handy and wear them when doing any work in which eye protection is needed.
10. Keep aisles and open spaces on floor free of tools and parts.
11. Be on guard against flashes or explosions of gasoline vapors, anti-freeze solution vapors and hydrogen from storage batteries. Keep flames and sparks away.
12. If your clothes become soaked with oil or gasoline, change them. Don't take the risk of catching on fire.
13. Never consider a job complete until you have checked to make sure all the lock washers and cotter pins are in place.
14. Never allow grease and oil to remain on the floor where you and others might slip on it and fall.
15. Always keep a suitable fire extinguisher near at hand and ready for use.
16. All employees of the Auto Maintenance Department shall have safety shoes or boots, and wear them during hours of duty with the company.

H. W. Quackenbush,
Supt., Auto Maintenance



A loose-leaf binder, as shown above, the answers to questions relating to bodies and refrigeration, tires and

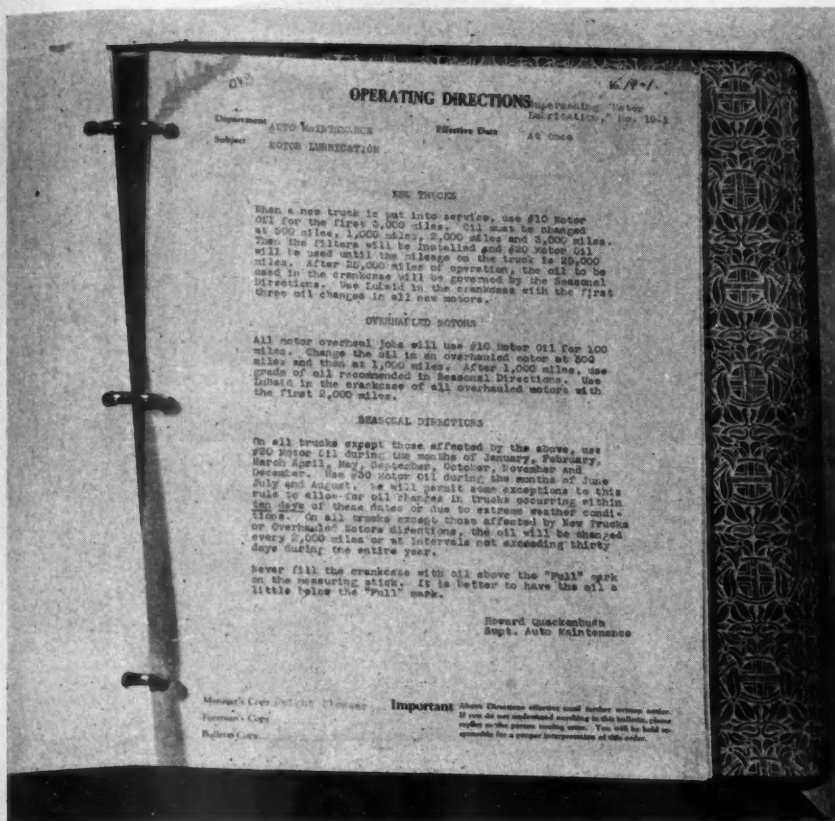
PM Points



H. W. Quackenbush

OUR company developed a pre-war PM program which has enabled us to keep our fleet of 94 trucks, four tractors and semi-trailers and six

company cars in good operating condition—far beyond the pre-war trading-in period. This program, which was strengthened since the war emergency arose, has helped us appreciably to avoid serious handicaps in maintaining adequate transportation facilities for the distribution of our meat products from our two processing plants in Fort Wayne, Ind., and Kalamazoo, Mich., to our branches—South Bend, Peru and Anderson,



is placed in the hands of each driver and mechanic. The bulletins in it supply safety, personal regulations, service, lubrication, washing and polishing, truck wheels, etc. Contents of some pages are reproduced at right and below at left

Care of Garages and Equipment

It is the duty of each garage man in charge of a garage to see that all oil and grease is removed from the floor once each week. Where the floor is equipped with drains, the floor will be washed once each week or more often, just as the conditions demand. Wherever possible, yellow lines will be painted on the floors so that each truck will have its proper place to park.

The floor space around the wash rack and grease rack will be cleaned every night after the day's work has been completed. All grease guns and tools will be kept clean and stored away in their proper places at night. At no time will employees be permitted to leave tools lay around on the floors or on work benches when they are off duty. This means not only company tools, but also tools belonging to the employees.

Oily rags and old parts must be kept in their proper containers and not thrown around over the garage.

Old parts are to be tagged, placed in proper containers and checked by the truck supervisor. The spare tires and extra battery which are kept at each garage for emergency use will be kept in a definite place in the garage.

It is very much in the mutual interest of management and employees to keep garage clean and operated in a business-like manner.

H. W. Quackenbush,
Supt., Auto Maintenance

from a Meat Fleet

Ind., and St. Joe, Muskegon, Lansing, Jackson and Detroit, Mich.

The four semi-trailer units haul seven- to eight-ton loads to the branches named. No overloads are permitted. They run five days each week. The shortest round trip is 120 miles, the longest is 160 miles.

It is necessary to give a great deal of the credit for our successful war-time operation to our pre-war policy of trading our 1-ton and 1½-ton trucks at 100,000 miles, or about every four years. All new units were placed on hard country runs for about two and one-half years, or up to 80,000 or 90,000 miles. Then we transferred them to short-haul work in cities for one and one-half years to round out the 100,000 mile mark, at which mileage they were traded.

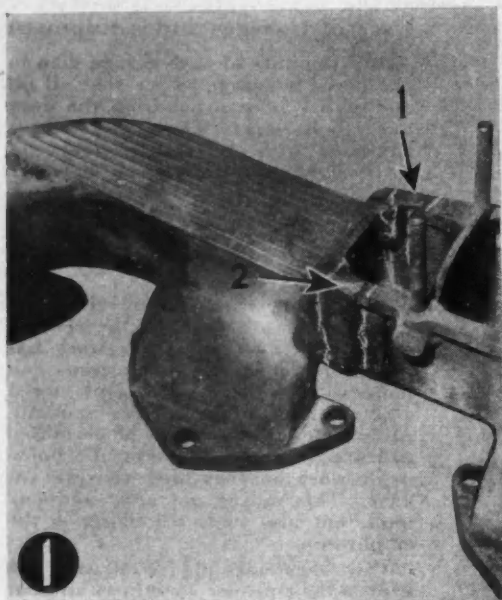
War-time maintenance program, derived from successful pre-war practices, schedules inspections and standardizes procedures. Bulletins eliminate guesswork, aid maintenance

by H. W. QUACKENBUSH

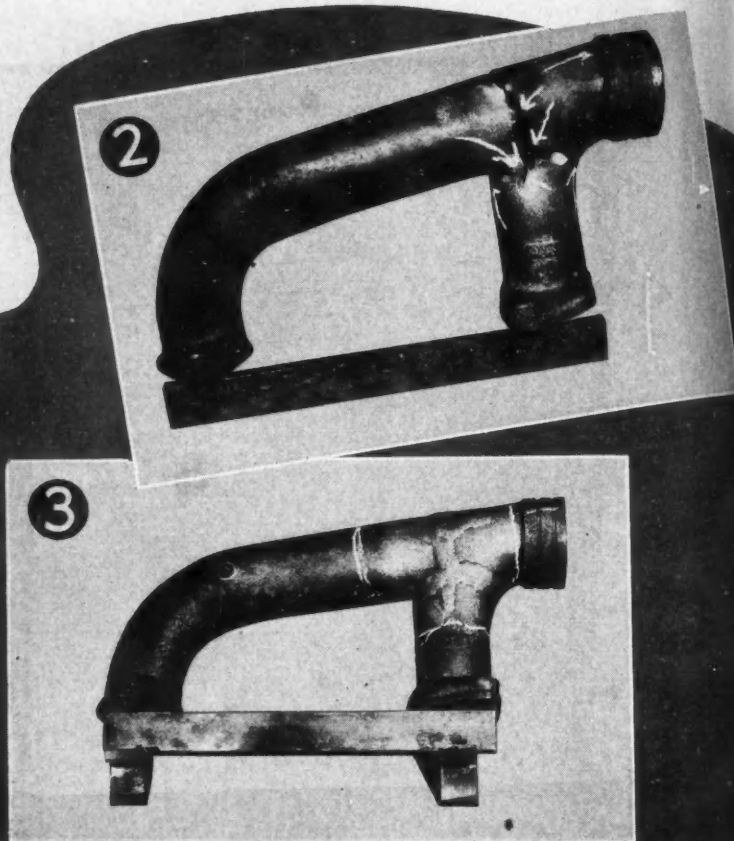
Fleet Superintendent, Peter Eckrich & Sons, Fort Wayne, Ind.

This method was profitable, as depreciation was the same whether we would operate a unit 25,000 miles in town, or 100,000 miles on country routes. Of course, the "freeze"

stopped that plan. Our present units, regardless of years and miles, will have to be kept rolling for the duration. Two other pre-war policies (TURN TO PAGE 108, PLEASE)



Breaks in the cast iron exhaust manifolds on these pages were repaired by the low temperature welding technique with cast iron rod. Preparation in Fig. 1 consisted only of grinding two 90 deg. Vs on surfaces 1 and 2. Fig. 2. This break was tackwelded at small unground points of contact shown by arrows. Fig. 3. Area between chalk lines was heated to a high red heat for contraction strain relief and even cooling



Alex. F. Morton

THE proper procedure for the true welding of cast iron has been thoroughly explained, for many years, by the numerous authors of handbooks on oxy-acetylene welding procedure. This article deals with an old idea put to new use.

Inasmuch as the data that follows has proved useful in many ways, even though it is not in accord with the recommended procedure for the true welding technique of cast iron, it is suggested that the experiments shown in Figs. 8 and 9, be duplicated. Thereafter, many jobs now done with bronze can be done with this substitute for the true welding of cast iron with a cast iron filler rod, especially during the present emergency when bronze rod is not always obtainable.

Repairing Exhaust Manifolds

Exhaust manifolds are in the same category as stove or furnace grates.

Low Temperature

"AN OLD IDEA PUT TO NEW USE"

This month Alex. F. Morton points out that the low temperature, surface heat method of welding cast iron can be just as successful with cast iron rod as with bronze—but the latter may not be readily obtainable at present.

As for the technique, he refers to the old method of making emergency repairs on furnace grates—a job no welder will guarantee or point to with pride of

workmanship because of its smeared and plastered appearance. Yet, the result usually is satisfactory to a surprising degree—not only for grate repairs but for cast iron automotive parts.

The author has worked out a simple, practical procedure which any mechanic familiar with the fundamentals of oxy-acetylene welding should have no difficulty in mastering.

Both are a headache to the welder, for after some time in service they both become burned and corroded. Any attempt to weld most of them only results in the base metal burning up or remaining in a red hot cinder-like condition which will not melt or fuse with the cast iron filler rod.

The only thing the welder can do with most fire grates, is to plaster a ring of molten cast iron around the broken section. He knows that he cannot weld them as they should be welded, but he has done the best he could, and they should stand up after being replaced, if given some care.

The unexplainable part of this

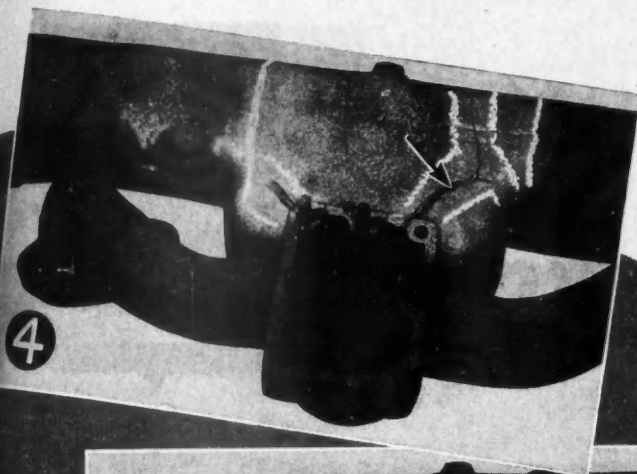
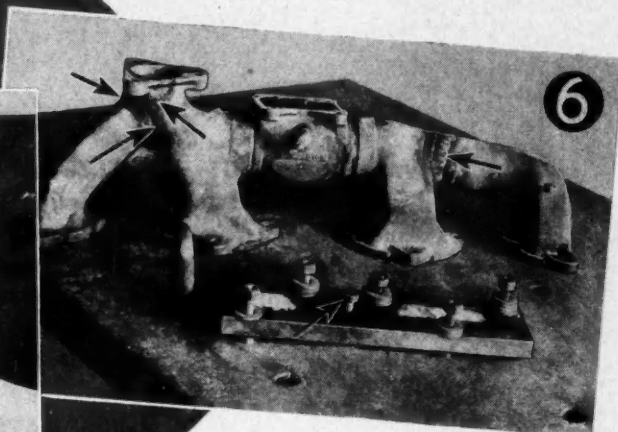
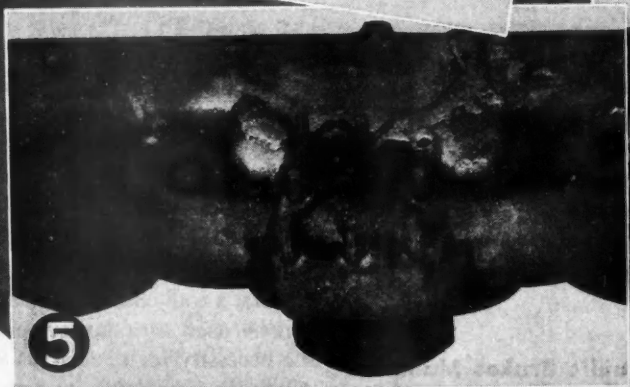


Fig. 4. This break was steel grit blasted and locally pre-heated in area within chalk lines. Fig. 5. The finished job. Welded area was reheated, then allowed to cool on the bench. Fig. 6. Although this three-piece manifold was badly broken, the repair procedure was similar to the other manifolds. A special, heavy plate was made to hold the various pieces in alignment. Plate was bolted to turntable by means of the bolt indicated by the arrow



e Cast Iron Welding

Damaged cast iron parts may be repaired successfully, without blow holes and with adequate strength, by low temperature adhesion welds locally pre- and postheated

by ALEX F. MORTON

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plastered repair is that these fire grates usually stand up in service a much longer time than they should, considering the phony weld that was made. Many of the users of fire grates welded in this way intended to replace them in the spring, only to change their minds and wait until they break again. Then they install

new ones, unless they can get them welded again.

From this plastering, smearing stuccoing or sweating on of the cast iron rod onto the fire grates comes the idea for its use on the exhaust manifold, with more than just satisfactory results and with surprising strength. The repair welder who

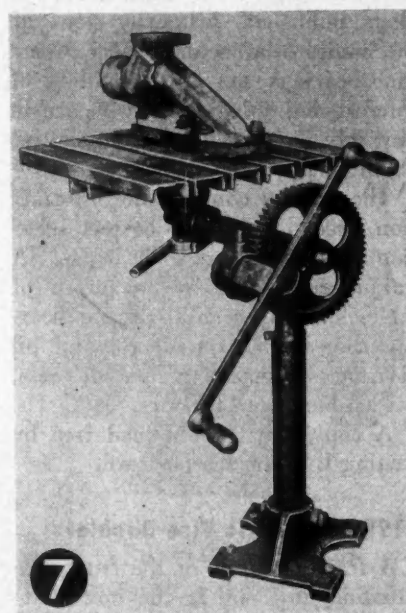


Fig. 7. This shows how one of the end pieces of manifold in Fig. 6 was set up

thought he was doing a makeshift job of the fire grate really did a far better job than he imagined. The experiments that will be outlined later in this article will, if duplicated, confirm this statement.

To further strengthen our conviction, we know that we can plaster, (TURN TO PAGE 82, PLEASE)

FREE PUBLICATIONS

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VALUABLE AIDS FOR FLEETMEN

A selected list of the latest literature — books, pamphlets and catalogs — intended to help fleet operators solve maintenance and operating problems. They are more valuable today than ever before. All are free. To get your copies simply fill in the numbers on the postcard and mail. No stamp is needed.

L198. Engine Bearing Manual

A new engine bearing manual has been published primarily for the mechanics who actually service engine bearings, but also should be of interest and value to all who are in any way concerned with automotive engine maintenance.

The manual contains the information needed to assure correct selection and installation of bearings. A unique feature is the inclusion of tables showing crankshaft and bearing dimensions, tolerances, and oil clearances for all makes of cars, trucks, buses and tractors.

A copy may be obtained free by writing L198 on the postcard.

L199. Synthetic Tire Booklet

A frank analysis of the truck tire situation now and in the immediate future, as well as a candid discussion of the quality and service to be expected of synthetic truck tires is contained in a recently published booklet by an eastern truckers association.

One half of the booklet, which is 3½ x 7¼ in. and has 20 pages, is devoted to that all important subject, "How to Get Best Results from Synthetics." Fleet maintenance men will find all the essential facts tersely summed up for quick and easy understanding. A copy will be mailed to any fleetman. Write L 199 on the free postcard.

L200. Hydraulic Brakes Manual

Three manuals of value to men who service hydraulic brake systems are being offered free to fleet maintenance men.

One of these manuals gives general service instructions and maintenance hints for the various hydraulic systems. Another gives specifications and related data on fast-moving parts for hydraulic brakes. How to bleed and refill hydraulic brake systems is the subject of the third manual. The information is complete, the subjects are authoritatively prepared and profusely illustrated.

For complimentary copies write L200 on the free postcard.

L201. Lock Nut Handbook

A new, 148-page, 9x12 in. book on self-locking nuts, that is practically an engineering handbook, has just been published, and is available to fleet operators and maintenance men. The book covers the hex, anchor, and clinch types of nuts, and contains a wealth of material that every shop man will appreciate, because it puts in easy-to-find form all of the data necessary for the intelligent planning of vibration-proof connections.

Numerous applications, showing how they solve difficult fastening problems, are illustrated. Suggestions for typical applications will help fleet mechanics to eliminate the

dangers and annoyances of loose bolted connections.

A free copy will be mailed to fleetmen writing L201 on the postcard.

L202. Tire Care Wall Chart

Published especially for truck operators, a wall chart is available which can be used as a poster reminder of the necessity for tire care.

These seven rules for tire care are effectively pictured: Don't Overload; Don't Exceed Victory Speed; Don't Overinflate; Don't Underinflate; Duals Must be Twins; Drive Carefully; and Correct Mechanical Defects.

Reasonable quantities can be obtained by writing L202 and number desired on the postage-free mailing card.

L203. Mild Steel Welding Book

A new method for increasing the speed of welding mild steel called "Fleet-Welding" is described in a 48-page booklet just published. This latest development introduces a technique of arc welding which not only has been demonstrated to increase the speed of the process over conventional welding methods, but also to cut costs as much as 59 per cent.

Some of the subjects covered in this manual include: Using "arc force" to increase welding speed; effect of penetration on welding costs; cost reduction with "Fleet-Welding"; factors affecting production speed and general information for use of procedure tables. It also carries complete information with corrective suggestions on the procedures used for butt welds, fillet and lap welds.

Write L203 on the free postcard for your copy.

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NEW PRODUCTS

P254. Valve Repair Set

A valve lifter and a split lock replacing tool are being marketed as a set by the New Britain Machine Co., New Britain, Conn.

The valve lifter is the "Little Handy" No. VL-151 designed to get into tight corners and handle springs up to 300 lb. strength. This tool is only 8½ in. long, but the screw controlled jaws expand to 21/8 in.



VL-151 "LITTLE HANDY" VALVE LIFTER



VL-139 SPLIT LOCK REPLACER

Jaws are adjustable to various spring sizes and remain set in any position. They expand approximately parallel in a vertical plane, allowing easy replacement of valve stem keys.

The split lock replacer, No. VL-139, is an efficient, compact tool for replacing all split type valve keys on late model engines. Because of its compact construction, it requires a minimum working space. Its sliding base prevents keys from dropping into the engine. Loading is simple. It can be used for single and double grooved stems, including engines using the new convex locks.

A priority of AA-5, or higher, is required for the purchase of these tools.

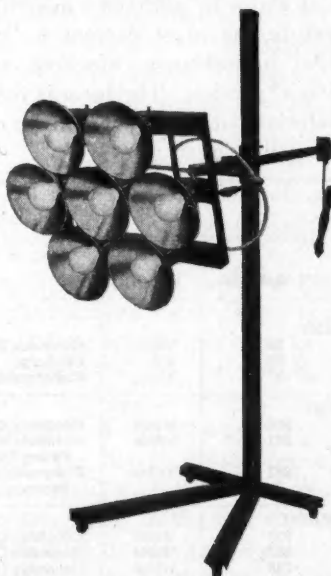
Use Free Postcard for More Details.

P255. Portable Infra-Red Lamp

The Fostoria Pressed Steel Corp., Fostoria, Ohio, has developed and is marketing portable radiant energy equipment to facilitate baking, drying and preheating operations.

Among the various applications listed by the manufacturer are, thawing radiators, frozen shackle bolts, drying wet ignition systems, etc.

The flexibility of this unit, known as model P-7-IR, permits it to be used in singular or multiple assemblies. Adjustable features of the cross arm on the upright and the reflector yoke allows the radiant energy to be directed at various angles from a height of 18 in. to 6 ft.



Data furnished by the manufacturer cites a case where a large, newly painted truck-trailer unit was given a baked finish in one hour, as against six to eight hours.

Use Free Postcard for More Details.

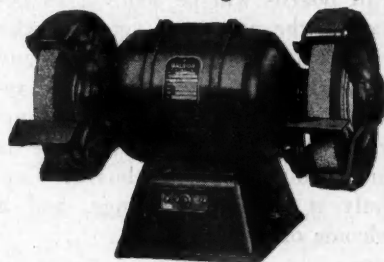
FOR FLEET OPERATORS

The latest in shop equipment, supplies, replacement parts and accessories developed by manufacturers for fleet operators. For more details of any product described, fill in the number on the postcard and mail. No stamp needed. Also use the postcard for additional information on any product advertised in this issue.

P256. Bench Grinder

The Baldor Electric Co., St. Louis, Mo., announces the development of a new 7-in. bench grinder, described as the 7100 series.

According to data supplied by the manufacturer, this new product is distinguished by the following features: Specially-designed motor, which is cool running when carrying



a normal load and which has 100 per cent overload capacity; pre-lubricated ball bearings which will require no lubrication for their entire life; first grade wheels balanced with Baldor balancing flanges.

Use Free Postcard for More Details.

P257. Grease Absorbent

Refiners Lubricating Co. of N. Y. and Waverly Petroleum Products Co. of Philadelphia, producers of Speedi-Dri, industrial oil- and grease-absorbent, announce the introduction of Sol-Speedi-Dri, especially processed and packaged for the automotive market.

(TURN TO PAGE 64, PLEASE)

A Guide to Giving Veterans Their Jobs

A fleet personnel manager looks at the problem of reemploying returning veterans and makes some suggestions

by JACK R. LEWIS

Director, Safety and Personnel, Davidson Transfer & Storage Co., Baltimore, Md.



Jack Lewis

IN THE past our efforts have been devoted largely to retaining our manpower for the continuation of our industry. Shortly we hope local draft boards will be sending us notices of the return of veterans who are seeking re-employment. In many cases our former employees will report direct to us, but don't be surprised if your former employee is sent to you by his local board. Certainly it will be a change, and a welcome one, too.

The carrying out of the provisions of Section 8, Selective Training and Service Act of 1940, has been vested in the director of Selective Service, who in turn will use the machinery of the entire Selective Service organization to place veterans in their old jobs—and in many cases, find new jobs with new employers. Undoubtedly, there will be questions arising as to the application of these general provisions. When differences of opinion arise, and they will, the subject in dispute may have to be settled by the courts.

Make no mistake as to the constitutionality of the act; it has been upheld in the case of "Hall vs. Union Light, Heat & Power Co." decided

Feb. 21, 1944, in the United States District Court for the eastern district of Kentucky. However, the act is not one-sided. It has definite conditions and stipulations that must be complied with by the veterans.

The first stipulation or condition provides that the veteran must show evidence of satisfactory completion of service. He must have completed his period of service to the satisfaction of those in authority over him. Therefore, he must present a "certificate" indicating satisfactory completion of service. The form is really immaterial but, likely, it will be one of the following:

TABLE OF DISCHARGE FORMS			
FORM NUMBER	COLOR	TITLE	Right to Reemployment Benefits of the Act
ARMY: 55 56 57	White Blue Yellow	Honorable Discharge.....	Yes
		Discharge.....	No
		Dishonorable Discharge.....	No
NAVY: 660 661 662	White White Yellow	Honorable Discharge.....	Yes
		Certificate of Discharge under Honorable Conditions (Naval or Naval Reserve).....	Yes
		Dishonorable Discharge (Naval or Naval Reserves).....	No
MARINES: 257 257a 258 258a 385a 385b 385c 385 385b	White White White White White White White Yellow Yellow	Honorable Discharge.....	Yes
		Honorable Discharge.....	Yes
		Honorable Discharge.....	Yes
		Honorable Discharge.....	Yes
		Discharge.....	No
		By Reason of Desertion.....	No
		Bad-Conduct Discharge.....	No
COAST GUARD: 2510 2510A 2510B	White White Yellow	Dishonorable.....	No
		Honorable.....	Yes
		Under Honorable Conditions.....	Yes

1. W.D.; A.G.O. form 280

2. W.D.; A.G.O. form 53

The veteran may present forms other than those indicated, but, for your guidance, we are listing a general table of discharge forms. The female branch of the service will issue the same discharge as given to the male personnel. (See table below).

It might be well to bear in mind that persons who were classified as conscientious objectors even though they were assigned to work of national importance under civilian direction instead of military service are not entitled to any re-employment rights or benefits. It also might be well to remember that members of the coast guard auxiliary are denied any rights under the act.

It is very doubtful if any trickery is contemplated by motor carriers to avoid the placement of returning veterans but that possibility has been given thoughtful consideration by those people responsible for the writing of the act. They have covered it very well. The basic rights of veterans covered by Section 8 of the act were outlined in an article in the August issue of COMMERCIAL CAR JOURNAL.

Seniority rights and prevailing rate of pay are granted to the veteran, provided the job he left was not of a temporary nature. This point may prove troublesome and certainly will need to be given intelligent thought and handling. Decision in the matter of a disagreement or dispute on this subject of whether the job was permanent or temporary finally would rest with the courts.

(TURN TO PAGE 157, PLEASE)

A Fleet Operator's "Fifth Wheel" Invention

New Jersey fleetman devises way to make the fifth wheel turn with trailer and not with tractor, claiming improved stability

by **JOHN N. APCAR**

Apgar Bros. Motor Transportation, Bound Brook, N. J.

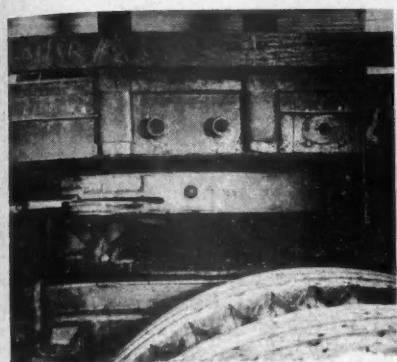


Fig. A. Close-up of Apgar's "fifth wheel." Two keys (not visible) make standard fifth wheel turn with trailer and not with tractor. Rocking shaft always is parallel with trailer axle and provides substantial support under all operating conditions



Fig. B. Advantages claimed for this wheel are greater stability and safety. Even though above tractor is parked at 90 deg., front end of trailer remains horizontal



Fig. C. Conditions here are identical to Fig. B except standard fifth wheel connects the vehicles. Note unbalance

THE purpose of the invention is to improve the stability and utility of Tractor Semi-trailer combinations.

A conventional semi-trailer body is supported at each of the wheels at the rear of the body and by a bearing plate attached to the underside of the front end of the body, which rests on the top bearing surface of the fifth wheel of the tractor. The fifth wheel is supported through trunnions by a rocking shaft that ex-

tends transversely of the tractor; that is, the shaft is parallel to the rear axle of the tractor. Now if the tractor and the trailer are lined up as on a straight road, the fifth wheel rocking shaft is parallel with the axle of the trailer and this provides what amounts to a four-point suspension. But when the tractor turns relatively to the trailer, the rocking shaft turns with it until at 90 degrees the shaft is parallel with the trailer and the equivalent of a three-point suspension results. When so suspended a man jumping on the front end of the average trailer can rock it easily as it tends to rotate about the rocking shaft. In practice the warping of the front end of the trailer is brought about by centrifugal force, or an improperly crowned road, or an unbalanced load. When the tractor turns, say 45 degrees, or more, the resistance to overturning provided by the rocking shaft which supports the fifth wheel and turns with the tractor has become so diminished that care must be taken by the driver in the matter of speed, choice of roads and conditions of parking, if overturning is to be avoided.

The present invention, for which a patent has been applied for, is illustrated in Fig. A. This shows the front end of the trailer with upturned bearing plate or apron resting on a fifth

wheel of the conventional type except that two keys (not showing) project up through the fifth wheel and enter slots in the apron attached to the trailer. These keys make what was formerly the fifth wheel turn with the trailer and not with the tractor with the result that the rocking shaft, one end of which can be seen just under the end of the lever at the central left of the picture, is always parallel with the axle of the trailer and provides with the axle a substantial support at all times.

It is possible for (what we will continue to designate as) the fifth wheel in this construction to turn with the trailer because it is mounted on the top plate of a turntable, the bottom plate of the turntable being mounted on a platform which is bolted, with the inverted U bolts shown, to the frame of the tractor.

The arrangement just described can be used with a trailer adapted to be keyed to the tractor fifth wheel and enjoy the advantages of such coupling; or, it can be coupled in the present conventional manner to a trailer not adapted to receive the keys of the tractor and operate with whatever advantages such coupling may possess. In this later instance, the plates of the turntable are connected together with a pin or bolt, and relative rotation of tractor and

(TURN TO PAGE 102, PLEASE)

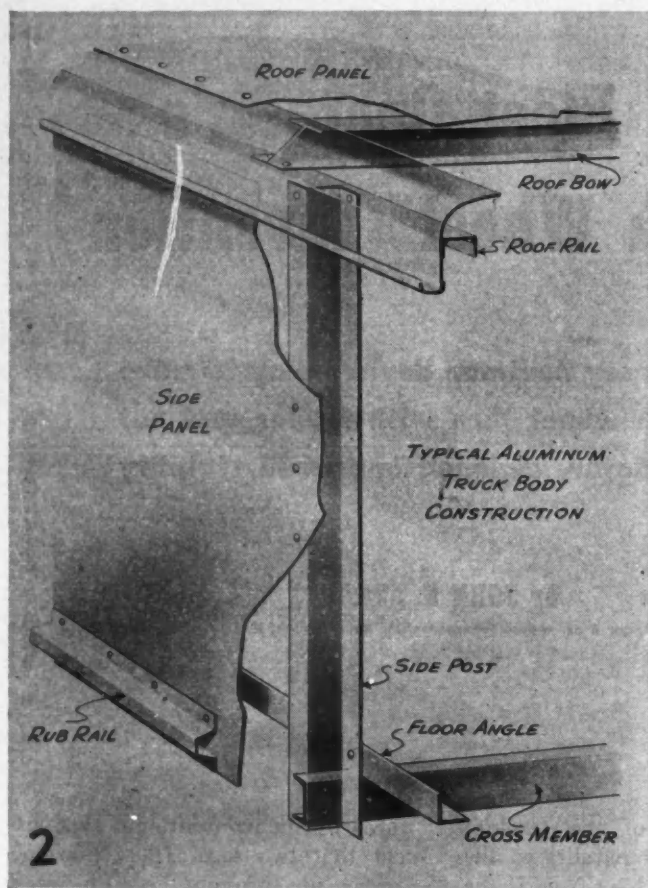
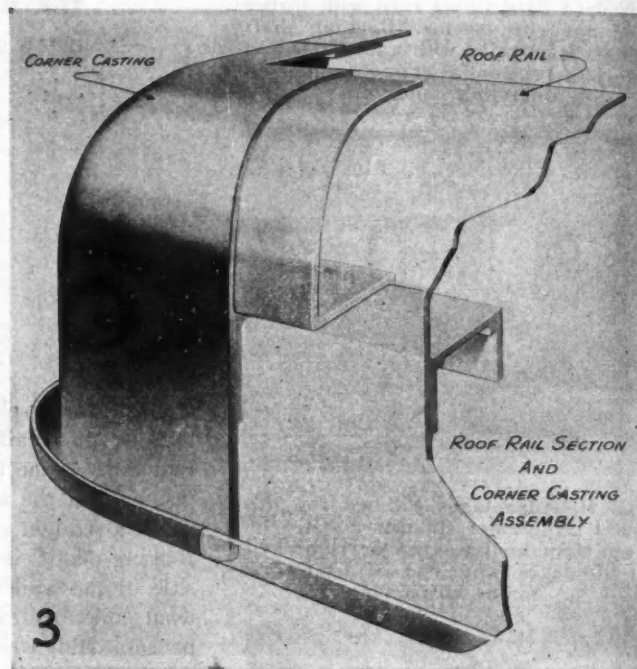
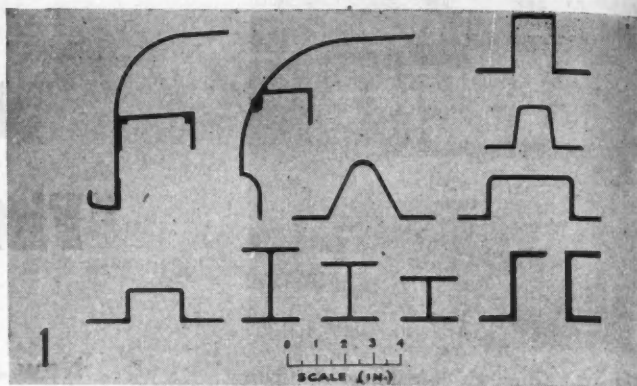


Fig. 1 shows in profile the various extruded aluminum shapes now being stocked. A wide variety of trim and drip molding also is available. Fig. 2 illustrates a typical aluminum body construction job and Fig. 3 shows the use of aluminum castings for roof corners



ALUMINUM

Now in Stock for Bodies

Civilian availability after restricted use suggests a review of the alloys on the

WITH the release of aluminum by the War Production Board for truck body and trailer construction, builders of commercial vehicles are now able to place orders for the light-weight metal and be assured of immediate deliveries. A wide variety of sheet, plate, extruded shapes, and castings is being stocked

by distributors throughout the country and these will enable builders to satisfy their customers with serviceable, attractive units that are light in weight, and require little or no maintenance.

For many years, operators have been taking advantage of the increased returns afforded by the use

of light-weight aluminum bodies. They have found that it is possible to increase the payload capacity of a truck by the amount of dead-weight saved. The economies of using aluminum at the present time are further multiplied by the fact that transportation facilities have been heavily overburdened because of the war.

TABLE 1

RECOMMENDED ALUMINUM ALLOYS
FOR TRUCK BODY CONSTRUCTION

35-1/2 H

Roof sheets; outside panels on bodies having inside lining or protection slats; sub-floors on insulated bodies.

615-T

Panels on bodies with which lading comes in direct contact; dump body sheets; gusset plates; floor sheets; tailgate sheets.

All extruded shapes; side posts; rub rolls; carlines; top sills, door and tail gate frames; slats.

525-1/2 H

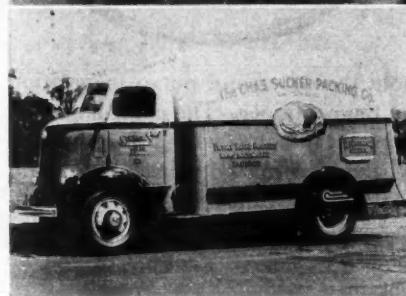
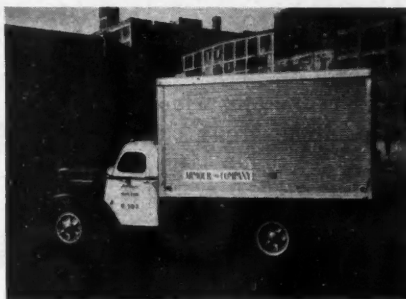
For panels and other work where the duty requires an alloy of intermediate properties between 35-1/2 H and 615-T.

175-T

All standard structural shapes; bolsters; longitudinals; clip angles; corner posts.

A175-T
535-T61

Rivets.



Examples of aluminum bodies. Top one saved 1400 lb. of dead weight. The center one saved 3000 lb. on closed top jobs and 1400 lb. on open top jobs. The bottom one saved 1750 lb.

by J. H. DUNN
Aluminum Co. of America

market, advantages in trucks and construction tips

The lack of adequate shipping capacity and the shortage of manpower have made the trucker's task an arduous one. To ease this situation, the War Production Board released aluminum for truck construction.

The reduction in dead-weight in truck bodies through the use of aluminum benefits the truck operator in

two ways: (1) by increasing the payload so that the same amount of work can be accomplished with fewer trucks and less manpower, and (2) by leaving the payload capacity unchanged, but utilizing the saving in weight to ease gas consumption and minimize tire wear.

Although the stocks of aluminum

now being placed in warehouses are not as complete as in the pre-war days, nevertheless, they will be sufficient to supply most builders' needs until a more comprehensive listing can be supplied. Sheet as wide as 60 in. is available, although 48-in. widths are the general standard. Builders will also find an adequate supply of standard structural shapes such as angles, channels, zeos, tees, and I-beams, together with top rails, roof bows, side posts and other special truck body extruded shapes.

Table 1 lists the more popular aluminum alloys used in truck body construction, and indicates the particular application for which each is most suitable. Most warehouses now have or are putting in stock these alloys and products.

The various extruded shapes now being stocked are shown in profile in Figure 1. In addition to those shown, there is a wide variety of trim and drip moldings available.

For purposes of giving construction hints to body builders, a typical aluminum construction job is illustrated in Figure 2. In this particular design, the top rail is arranged to receive the roof bow and side posts, together with side panels and roof sheets. Figure 3 illustrates the use of aluminum castings for roof corners, in which all parts are connected without complicated cutting or fitting.

The few illustrations shown are only samples of how aluminum can be employed in truck body construction. Naturally, there are numerous other designs which can advantageously employ aluminum. Double aluminum panels, for example, may be used, or the outer panels can be made of aluminum and the inner lining of plywood. In other designs, the aluminum panels may be used on the inner side only, leaving the side posts exposed. For insulated bodies, narrower posts may be used with wooden breaker strips, or wooden posts may be utilized throughout the structure.

For the ordinary types of commercial (TURN TO PAGE 105, PLEASE)

NEW PRODUCTS (CONTINUED FROM PAGE 59)

Sol-Speedi-Dri has the advantages of being easily spread by hand and cleaned up with a stiff broom. It is said to draw oil and grease out of wood, steel, or concrete floors like a blotter absorbs ink. Even when thoroughly soaked in oil and grease, it will not readily burn. This fire-retardant quality is especially important to garages and service stations where gasoline and oil are stored.

Use Free Postcard for More Details.

P258. Camber Corrector

The Bear Mfg. Co., Rock Island, Ill., has just introduced a new model camber corrector that will enable a mechanic to increase camber on all A arm knee-action cars in a simple operation.

The manufacturer states that this tool is easily and quickly applied



without removal of wheel or parts. It fits on near top of steering knuckle support arm and correction force is exerted by hydraulic power. Hookup and entire operation requires only a few minutes' time. Assembly includes right and left jaws to fit both support arms.

Use Free Postcard for More Details.

P259. Bucket Type Lubricator

The Gray Co., Inc., Minneapolis, Minn., has announced a new bucket pump called the "Block Buster" for lubricating trucks and other general greasing requirements.

Construction and design features include an easy operating double acting pump developing 4000 lb. pressure; hardened steel, precision ground piston; simple positive foot valve; 18 gauge seam-welded container with ingenious pump support bracket which keeps the pump from

being completely removed when filling; and a strong carrying handle which acts on a large stud bolt to



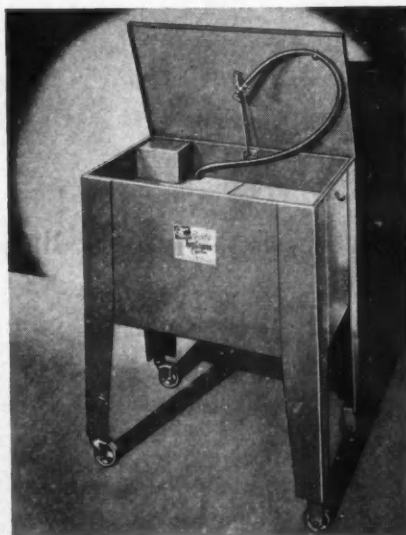
hold the cover and pump in position on the container. The conical shaped hopper bottom automatically feeds all the lubricants in the container to the foot valve and prevents channeling and loss of prime.

The Graco "Block Buster" can be obtained with 5½ ft. or 10½ ft. hydraulic adapter-equipped hose assembly, giant buttonhead coupler-equipped hose assembly, or standard buttonhead coupler-equipped hose assembly.

Use Free Postcard for More Details.

P260. Parts Cleaning System

A new parts cleaning system, combining the utility of two washers into one self-contained portable unit, has



been announced by the Gray-Mills Co. of Evanston, Ill. The system includes a portable cleaner with a

unique "swisher" feature and cold-cleaning Flo-Bac solvent.

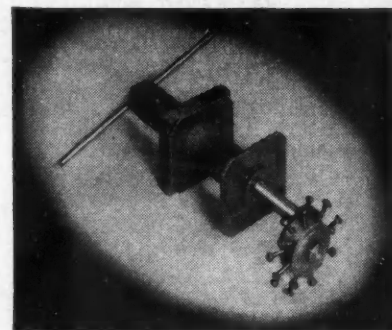
Large parts, requiring individual handlings, as well as bearings, carburetors, etc., are cleaned quickly of grease and grime by a strong stream of solvent pumped from the tank below. The smaller parts may be washed in quantity by merely pouring them into a basket and immersing in solvent. The two-section shelf may be removed, giving access to the dipping tank below. The dipping basket rests on a simple, hand-operated swisher, which speeds the cleaning operation by providing a convenient method for agitating fluid.

The cleaning unit is fully portable, equipped with a built-in gear-type pump. A safety-cover eliminates fire hazards. The Flo-Bac solvent degreases parts without pitting and corroding. It is used over and over again and continually filtered.

Use Free Postcard for More Details.

P261. Carbon Removal Tool

The job of removing carbon from the air intake ports of the GM 2 cycle diesel engine is said to be a matter of minutes with the new Stuart



carbon removal tool, a product of Stuart Engineering Division, Chicago. A better, cleaner job is assured, and in the case of a 6-cylinder engine, at least three and one-half hours are saved over the time required by the most favorable of the previous methods used. Ports can be cleaned without removing the pistons or pulling the cylinder sleeves, bringing about an additional saving in time over some other methods.

The operation of the Stuart tool is simple and positive. The head, which carries two rows of eight punches each, is mounted to a shaft by an eccentric cam and is designed so that when it is lowered into position the punches are automatically (TURN TO PAGE 246, PLEASE)

The New Essentiality List for Tire Replacements

Provides classification of truck and bus services in terms of commodities carried and industries served to meet tire crisis

THIS Essentiality List has been prepared by the War Production Board and the War Food Administration at the request of the Office of Defense Transpor-

tation because of the severe shortage of the supply of truck and bus tires. The list provides a classification of motor truck services according to the CWN Code in terms

of commodities carried and industries served. All services are grouped into classes according to their relative essentiality. The priority ratings as listed apply to each size and type of tire for trucks and buses for which applications exceed supply. The Priority List is designed to provide a flexible basis for determining eligibility as conditions vary from time to time and from place to place.

Preference based on essentiality is a determination which may be conditioned by: Conservation practices, urgency of the need for a tire, opportunity for diversion to other carriers and the availability and feasibility of using lower grade rubber for recapping. Accordingly, an applicant may not receive the protection and preference accorded by an assigned rating if:

1. Diversion of traffic to other carriers is feasible.

2. The character of operations, type of equipment and condition of tires will permit recapping or use of lower grade tires.

3. There is another applicant within the same priority class who has a greater degree of urgency.

ESSENTIALITY LIST OF TRUCK AND BUS MOTOR VEHICLE SERVICES

For the determination of priority and preference based on essentiality of service in the allocation of new replacement tires for commercial vehicles. Essentiality shall be accorded in order of the Classes 1, 2A, 2B, 3, 4, 5. The order of listing within any class does not indicate priority. Services connected with the following:

LEGEND:

- (O) Off-the-highway and Over-the-road Commercial Operations
(WS) Wholesale Local Commercial Delivery & Service Operations
(R) Retail Local Commercial Delivery Operations¹

GOVERNMENT AGENCIES (Services)	O	WS	R
02 Fire fighting.....	1	1	1
03 Policing.....	1	1	1
04 Public health, garbage and sanitation.....	1	1	1
06 Mail.....	1	1	1
06 Highway maintenance and repair.....	3*	3*	..
Other Government services ².....	..	..	..

PUBLIC UTILITIES	O	WS	R
80 Mixed service ².....	..	..	..
82 City and suburban bus lines.....	1	1	1
83 Intercity bus lines.....	1	..	..
84 Intercity truck lines (all commodity).....	2A	2A	..
85 Intercity and local carriers of household goods.....	3	3	3
86 Intercity truck lines, agricultural products (all commodity).....	2A	2A	..
87 Intercity truck lines, (limited commodities) ².....	..	..	..
88 City trucking and drayage:			
88a Collection and delivery to common carriers.....	2A	2A	..
88b Other city trucking and drayage.....	..	3	..
89 Tank trucking, city and intercity.....	1	1	..
90 Other mixed or not classifiable service ².....	..	..	..
91 Carriers other than motor carriers.....	2B	2B	..
92 Telephone, telegraph and radio (communication).....	1	1	3
93 Other Public Utilities.....	1	1	..

AGRICULTURAL AGENCIES: In this group will be included the applications of persons, firms or corporations engaged in farming, dairying, animal husbandry, fishery, and forestry, not including, however, any logging or timber operations.

	O	WS	R
14 Ice.....	2A	2A	2A
20 Mixed and other farm products:			
20a Perishable farm products.....	2A	2A	3
20b Non-perishable farm products.....	2B	2B	3
21 Live animals:			
21a Meat animals, work animals and bees.....	2A	2A	..
21b Race horses, exhibition horses.....	5	5	..
22 Live poultry.....	2A	2A	3
23 Crude animal and poultry products, edible.....	2A	2A	2A

	O	WS	R
24 Crude animal products, inedible (except fibres):			
24a Crude animal products, inedible hides and skins.....	2B	2B	..
24b Shells.....	3	3	3
24c Furs, feathers, etc., except for army orders.....	5	5	5
25 Fresh fruits and vegetables.....	2A	2A	3
26 Grain:			
26a Grain except malt, hops and brewer's rice.....	3	2B	2B
26b Grain malt, brewer's rice and hops.....	5	5	..
26c Malt extract.....	2B	2B	3
27 Animal and poultry feed.....	2B	2A	3
28 Dried fruits and vegetables (except coffee and tea).....	2B	2B	4
29 Animal and vegetable fibres.....	3	3	5
46 Agriculture equipment.....	2B	2B	3
50 Other mixed processed necessities ²	2B	2B	3
51 Farm supplies.....	2B	2B	3
52 Dairy products—processed:			
52a Dairy products, except ice cream and frozen desserts.....	2A	2A	2A
52b Ice cream and frozen desserts.....	4	4	5
53 Packing house products:			
53a Packing house products, perishable.....	2A	2A	3
53b Packing house products, non-perishable.....	2B	2B	4
54 Processed foods and groceries except beverages:			
54a Bread, and breads (except pastries), flour, meal and baking ingredients.....	2A	2A	2A
54b Cake, cookies, crackers, pastries, etc.....	4	4	4
54c Other processed groceries except coffee, tea and extracts.....	2B	2B	4
54d Coffee, tea, extracts.....	4	4	4
61 Alcoholic liquors and beverages.....	5	5	5
62 Non-alcoholic beverages.....	5	5	5
63 Confectioneries.....	5	5	5
68 Manufactured tobacco.....	5	5	5
69 Horticultural, floriculture florists:			
69a Horticultural plants and stock of vegetables and fruits.....	2B	2B	3
69b Horticultural flowers and plants for sick room.....	4	4	4
69c Horticultural flowers and ornamental shrubs.....	5	5	5

	O	WS	R
73 Water in tank trucks.....	2A	2A	..
77 Milk, in tank trucks and refrigerated milk vans.....	1	1	..

EXTRACTIVE INDUSTRIES (Production, refining and distribution). All industries engaged in extracting raw materials from the earth, including mining, quarrying, drilling, oil and gas production, and logging; such as coal mining, products of other metallic and non-metallic ores and concentrates, crude petroleum, natural gas, sand, stone and gravel, etc. The rating of trucks used in maintenance of mining facilities is the same as commodity listed.

	O	WS	R
10 Mixed raw materials ².....	..	..	..
11 Ores and concentrates:			
11a Ores and concentrates except gold.....	3§	3	..
§ Except copper and iron ore and concentrates of mines entirely dependent on motor trucks shall be rated.....	2A	..	..
11b Gold ore concentrates.....	5	5	5
12 Solid fuels.....	2B†	2A	2B
13 Crude petroleum.....	1	1	..
15 Mixed ice and solid fuels.....	2A	2A	2A
17 Quarry Products:			
17a Industrial silica and fluxing stone.....	2A	2A	2B
17b Other quarry products.....	3	3	3
18 Timber, (including rough sawn timber and canis).....	2A	2A	..
19 Other raw materials.....	3	3	3
30 Other and mixed industrial basic materials ²	3	3	3
32 Fats, oils and greases:			
32a Petroleum, oils, liquid gases and greases.....	1	1	2B
32b Other fats, oils and greases.....	2B	2B	4
70 Mixed liquid in tank trucks ²	1	1	2B
71 Motor fuel in tank trucks.....	1	1	2B
72 Fuel oil in tank trucks.....	1	1	2B
78 Vegetable and animal oils in tank trucks.....	2A	2A	..
79 Other liquids in tank trucks.....	3§	3	..

CONTINUED ON NEXT PAGE

The New Essentiality List for Tire Replacements

(CONTINUED FROM PAGE 65)

CONSTRUCTION INDUSTRIES (Materials)

	O	WS	R
01 Service operations ²			
34 Paper stock and containers:			
34b Wall paper	4	4	5
35 Lumber	3	3	3
36 Building materials and clay products	3	3	3
37 Structural metal:			
37a Structural metal, architectural metal work	4	5	5
37b Structural metal, ornamental	5	5	5
38 Structural glass and stone	3	3	3
94 Construction services	3	3	3

PROCESSING INDUSTRIES (Manufacturers). Include manufacturing establishments of every sort and kind, (whether by manual, mechanical, or chemical means or process.)

	O	WS	R
18 Gas (in containers) and special tank trucks for liquid oxygen	2A	2A	2A
31 Chemicals:			
31a Navy, military, industrial and agricultural chemicals	2A	2A	2A
31b Paints, varnishes and mixtures	3	3	4
31c Dyes used in cosmetics and perfumes	5	5	5
33 Leather, rubber and plastics (non-military) including leather and rubber apparel	2A	2A	4
34a Paper stock and containers except wall paper	2B	3	4
37c Structural metal, industrial	2A	2A	
39 Scrap and waste (pick up)	2B	2B	
40 Mixed industrial war equipment**	2A	2A	
41 Aircraft	2A	2A	
42 Vehicles and parts:			
42a Vehicles and parts excluding passenger cars	2B	2B	3

	O	WS	R
42b Transportation of new and used passenger cars (except military)	3	3	3
43 Ordnance	2A	2A	
44 Boats and Marine Equipment:			
44a Boats and marine equipment for commercial fishing, transport and repair	2A	2A	
44b Pleasure boats and equipment	5	5	5
45 Munitions and explosive (civilian)	2A	2A	5
47 Industrial machinery and parts	2A	2A	
49 Other industrial equipment	2B	2B	
55 Apparel:			
55a Military and industrial apparel	2B	2B	5
55b Civilian apparel, ordinary and household	4	4	5
56 Drugs, medicines, prescriptions:			
56a Drugs, medicines, except toilet preparations	2B	2B	2B
56b Toilet preparations, cosmetics, etc.	4	4	5
56c Soap	2B	2B	4
57 Furniture and household furnishings	4	4	3
58 Printed matter	3	3	5
59 Textiles:			
59a Textiles for armed forces	2B	2B	
59b Textiles for civilians	3	3	4
64 Furs, musical instruments, and sports goods	5	5	5
65 Office or store furniture or fixtures	4	4	3
66 Clocks, watches and jewelry:			
66a Clocks and watches	3	5	5
66b Jewelry	5	5	5
67 Leather and paper articles	4	4	5
74 Chemicals in tank trucks	2A	2A	
75 Alcohol in tank trucks and drums:			
75a Industrial alcohol	1	1	
75b Beverage alcohol	5	5	
76 Naval stores and distillates in tank trucks	3	3	
97 Informational (news service, reporting)	5	5	5

BUSINESS, PROFESSIONAL, PERSONAL AND REPAIR SERVICE AGENCIES AND INSTITUTIONAL AGENCIES

	O	WS	R
05 Ambulance and hearse service	1	1	1
07 Teachers and students (school buses)	2B	2B	
08 Workers (buses)	1	1	
60 Other and mixed consumer accessories	4	4	5
90 Other, Mixed and not Classifiable:			
90a Supplies for hospitals, sanitarium and charitable institutions	1	1	1
90b Repairs for building equipment	2B	2B	2B
90c Repairs for equipment and appliances (non-portable)	2B	2B	2B
90d Repairs for automotive equipment	2B	2B	2B
90e Repairs for equipment and appliances (portable)	5	5	5
90f Supplies and equipment for social, fraternal and athletic clubs	4	4	4
90g Supplies and equipment for places of amusement including circuses and street shows	4	4	4
90h Supplies and equipment for recreational establishments	4	4	
90i Pest control for crop protection	2A	2A	2A
90j Films for theatres	3	3	
90k Circuses and other traveling shows	4	4	
95 Laundry, linen supply, diaper service, cleaning, dyeing, tailoring	2B	2B	3
96 Finance, (armored cars)	2B	2B	

¹ A retail delivery for the purpose of this Essentiality List is defined as "a delivery to a consumer for his own personal or household use." All local deliveries other than retail are classified as wholesale deliveries.

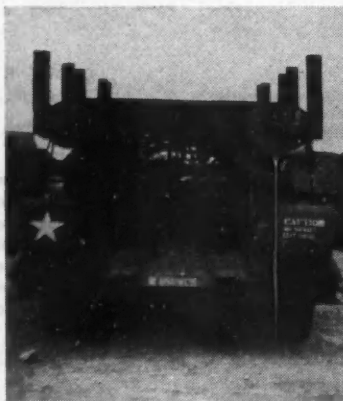
² Rating will be given according to the rating of the preponderance of traffic carried.

³ The rating of mixed materials will be determined by the rating of the preponderance of the traffic carried.

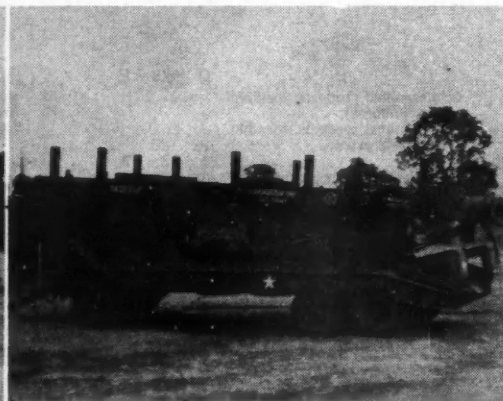
⁴ Exception may be granted access roads to war industries and military establishments which may receive top rating.

⁵ ⁴⁰ Mixed Industrial War Equipment includes all equipment and supplies for war industry including metal, wood, cork, asbestos, and other materials.

[†] Except off-the-highway, solid fuels has a rating of 2A. This includes mine delivery to rail cars and coking coal moving directly to coke ovens for metallurgical or industrial raw material use where rail service is not available. Ratings applied to off-the-highway service apply to all trucks whether or not they hold a Certificate of War Necessity.



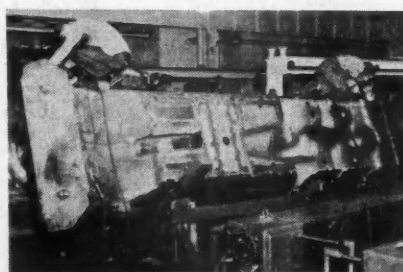
Huge trailers are rolling railroad cars day and night to LSTs waiting in British ports to rush the cars to the continent. When U. S. Army Trans-



portation Corps officials realized that it would be impossible to move the cars to the ports via British lines, they turned to trucks as a solution



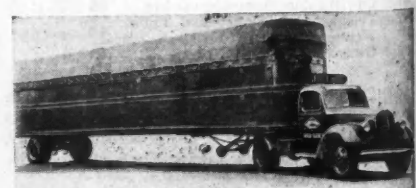
Known as the M-8 this Ford-produced Army 7-ton, six-wheeled scout car has the speed of an automobile, long-cruising range and can climb a 45 per cent



grade. Discarding conventional construction Ford fabricated an armored hull by are welding which in itself serves as a frame



The first heavy duty axle coming off the assembly line at the Madison, Ill., plant of Standard Steel Spring Co. This is part of a \$90,000,000 contract, said to be the largest of its kind in military history. At peak production, officials state, monthly production, will exceed the best 12-months of peacetime operation



The Akron branch of the Fruehauf Trailer Co. added 12 feet to the length of this trailer and two ft. to the height, stretching a standard Fruehauf model from 28 ft. to 40 ft. The rebuilt trailer is used by The Wm. Herbert & Son Co. of Youngstown, Ohio, to carry Airacobra fuselages

CHECK-UP OIL PUMP AGAINST PRESSURE

(CONTINUED FROM PAGE 51)

may have been obtained by testing a number of pumps, the pump should be repaired.

If the pump has a built-in by-pass valve, this test will show when the by-pass opens, which can sometimes be too low. When the pump has a built-in by-pass, it is necessary to plug off the by-pass in order to make the maximum pressure test.

The usual place for loss of oil pressure is across the end of the pump gears. Unless the wear of the teeth of the gears is excessive, which will only be caused by very dirty oil, the greatest loss of pressure occurs at the end of the gears. Excessive clearance may be the result of wear on the end cover plate or may be caused by too thick a gasket under the cover plate. Various pump manufacturers supply some data in regard to desirable end play in these pump gears. Whenever this information is available, it should be used in repairing the pump. If this information is not available, a minimum end play of .002 in. to .004 in. is the usual allowance and should produce correct delivery at normal operating pressure. It is also worthwhile to check the delivery volume at 50% increase in pressure, as this will give some indication of the delivery which will occur at lower temperatures.

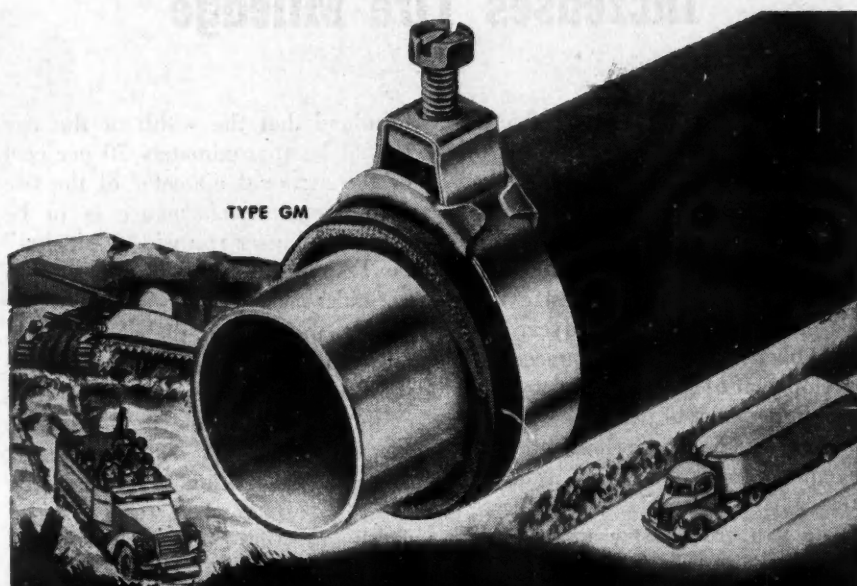
For use in such a testing machine, the oil should be at the viscosity of

the heated oil in the crankcase while the engine is running. In engines which use SAE 30 oil, this hot oil viscosity can be approximated by a mixture of one part kerosene and two parts SAE 30 oil at room temperature. Your oil vender can give you similar approximate mixtures for the specific oil and crankcase temperatures which you may wish to test. Of course, you can arrange to heat the supply of oil so that the tests can actually be made at operat-

ing temperatures. However, it has been found that the kerosene mixture disclosed some very startling conditions on oil pumps which apparently were in very good condition, and was satisfactory testing medium. There is only one way to test an oil pump and that is to measure its delivery against pressure. An oil pump should be tested every time the crankcase is opened.

END

(Please resume your reading on P. 52)



DEPEND ON WITTEK

NOC-OUT

HOSE CLAMPS



Frank N. Isbey, chairman of the Michigan War Finance Committee, presents the first bond purchased in Detroit's Fifth War Loan Drive to Harold R. "Bucky" Harris, driver for Geo. F. Alger Co., as the company's award for an 18-year service record in which Harris has rolled up a total of a million and a half miles without a single accident. Harris drives one of the company's new Fruehaufs painted with a patriotic War Bond message. Standing at the left is C. A. Justin, sales manager for Alger, and at the right, A. C. Scott, general manager.



Type A—Adjustable
For Replacement.

The standard of the industry. Quick-tightening, perfect leak-proof hose connections, for original equipment and replacement. For Radiator, Heater, Booster Brakes and High Pressure hose connections. Wittek Manufacturing Co., 4305-15 W. 24th Place, Chicago, Ill.



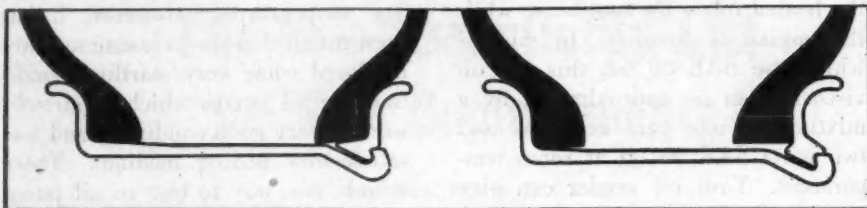
Type HP—For High
Pressure Require-
ments.

WITTEK



NOC-OUT

HOSE CLAMPS



At left is Goodyear's new wide base rim developed. The old style rim is shown at right. New rim rings increase rim width up to more than half an inch

New Wide Base Rim Increases Tire Mileage

TODAY, with truck tire production drastically curtailed, and with the tires that are being manufactured made largely of synthetic rubber, it is vitally important that every factory which will increase truck tire life be utilized to the fullest extent.

Mindful of this the Goodyear Tire & Rubber Co., has announced the development of a new, wide base rim, combining all the features of the present standard rim base with an ingenious, new side ring that increases rim width.

The rubber industry recently de-

termined that the width of the rim should be approximately 70 per cent of the sectional diameter of the tire if maximum performance is to be obtained. Lesser rim width "pinches" the tire and causes excessive flex in the sidewalls.

Tires mounted on the wide rims do not generate as much heat in the shoulder of the tire as do tires mounted on narrow rims and the average amount of deflection under load and in motion is reduced by 12½ per cent when ratio of rim width to that of tire sectional

diameter is increased from 60 to 70 per cent. The wider rim also adds to the stability of the tire, reducing sway and giving a more positive steering response.

As shown in the accompanying illustration the new width is obtained through use of the new type side ring which generally adds a half inch or more to the rim width.

An additional feature of the new type rim is the tapered "seat" under both beads. This centers the beads and decreases chafing and failure.

Present users of Goodyear rims can obtain an increase in their rim base width merely by obtaining new side rings as the old and new side rings are completely interchangeable. To get full 70 per cent rim width ratio, new base and rings are available.

Tests have proved that use of a wider rim will preserve the carcass for a greater number of retreads.

Two separate bus operations showed increases in mileage of 15 and 18 per cent through use of the wide base rim while an overland hauling company which recapped tires at 44,000 miles when using standard rims, increased this to 68,000 miles through use of the wide base rim.

Steel-Ribbed Floor Strengthens Trailer Chassis

A WARTIME engineering development of interest to all trailer users is a new and patented steel-ribbed floor just announced by the Fruehauf Trailer Co., of Detroit.

F. M. Reid, vice president in charge of engineering for Fruehauf, points out the new floor is capable of withstanding a concentrated load of 1000 lbs. per sq. ft.—Some 2½ times more than a conventional all-wood floor of the same thickness.

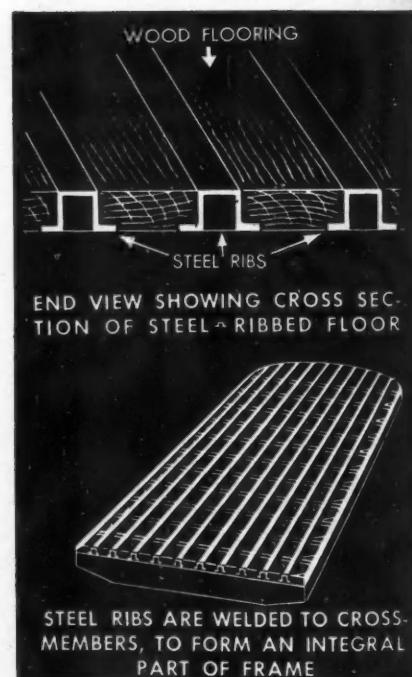
The steel-ribbed design is a radical departure from the usual "tongue and groove" type. Hardwood floor boards are bolted down between 10 flanged steel ribs, running substantially the full length of the trailer. The flanges of the ribs support the floor boards, and the steel joints are

flush with the top of the floor, forming a smooth, long wearing surface.

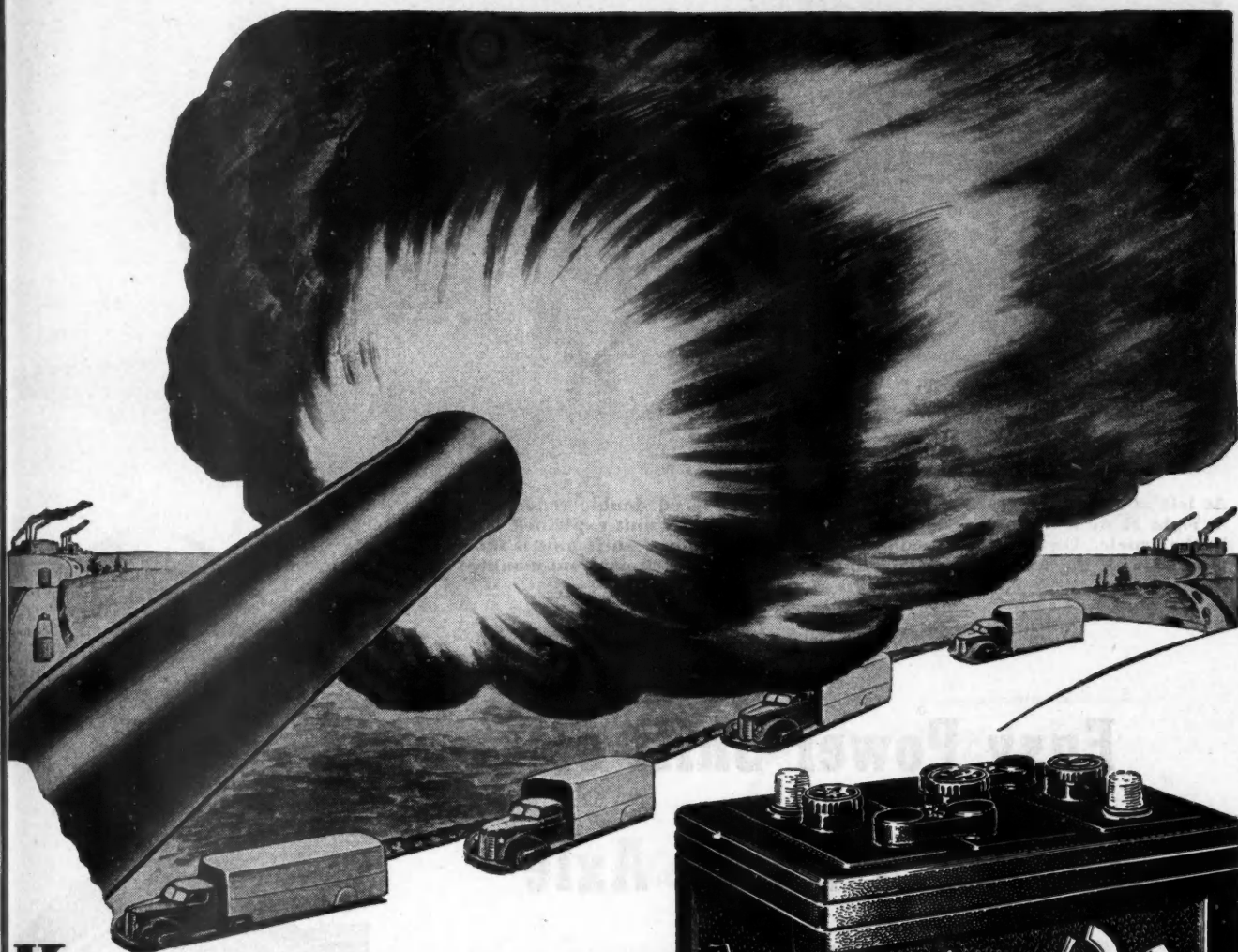
The ribs, which are of high-tensile steel, are welded to all chassis cross-members and form an integral part of Fruehauf's airplane-type frame.

It is stated that, with the new construction, expansion or contraction of boards will not open up cracks in the floor, since each floor board is backed up by metal throughout its entire length. And this weather stripping reinforcement also eliminates the "buckling" which frequently develops in conventional floors.

Besides increased strength and rigidity, the servicing problem is greatly simplified. Any single board can be replaced without disturbing the rest of the floor.



These sketches show construction of Fruehauf's new steel-ribbed floor



Keeping gun tubes moving along a hundred-mile production line . . .



From ordnance plant to proof-firing plant, a hundred miles away, a cargo of gun tubes speeds along. Delivery must be made that night . . . the gun tubes picked up next morning . . . then on again to another plant in another town for mounting on half tracks. This is just one of war-time's many production lines, measured in miles, that depends on motor trucks.

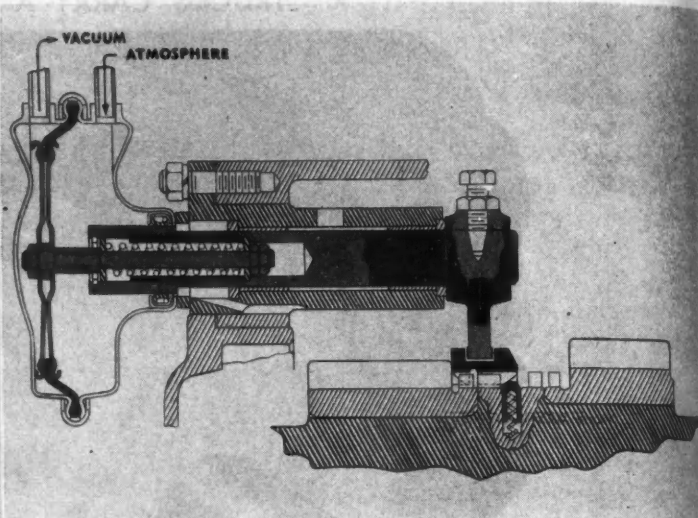
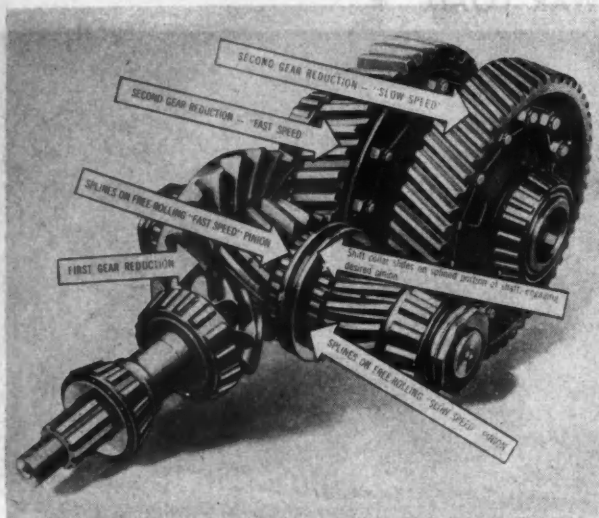
The movement of war materials, however, is only one phase of the nation's transportation job. Millions of trucks, all types and sizes, operating singly and in fleets, on the

open highways and in local delivery service, are speeding to destinations, products of every kind so vital to the civilian needs.

These trucks must be kept in service. Equipment must be extra sturdy to endure the terrific strain. That's why so many truck owners choose Exide Extra Duty Batteries. For Exides are built for long-life, dependability, and ease of maintenance. When you buy an Exide, you *Buy to Last*. Take care of it and *Save to Win*.



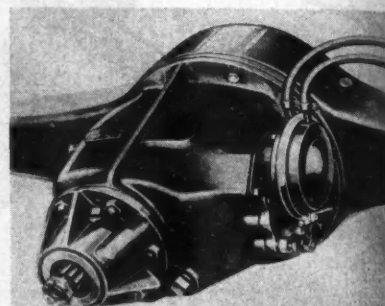
THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32
Exide Batteries of Canada, Limited, Toronto



At left above is the gearset of the new Timken 2-speed double reduction axle. At right above is a cross section of the Easy Power Shift unit explained in detail in the article. On light and medium duty axles the power shift unit is mounted parallel with the axle housing and on the larger axles it is front-mounted, as shown at right.

Easy Power Shift on Timken 2-Speed Axle

Details of the power-shifting mechanism now available as built-in feature on new 2-speed double reduction axles



ANNOUNCEMENT is made by The Timken-Detroit Axle Co. of a new 2-speed axle power-shifting mechanism called the Easy Power Shift, available as a built-in feature with new Timken 2-speed double reduction axles. More power for heavy loads, greater economy, increased truck earnings and faster schedules, with less driver fatigue, are among the advantages claimed for the new Timken 2-speed axles with the new power shift.

Either fast or slow axle ratio may be pre-selected while running under torque load in the other. The shift is completed without delay as soon as the driver releases the foot throttle momentarily. This feature is said to be of particular advantage when "splitting" transmission gears. For

example, when running in slow axle ratio and direct or fourth transmission speed, the driver can readily shift down to the next lower speed combination of fast axle ratio with the dash selector, and then shifting the transmission gears in the usual way. The power shift unit in the rear axle will make the gear change or shift in the axle during the interval required for shifting the transmission gears.

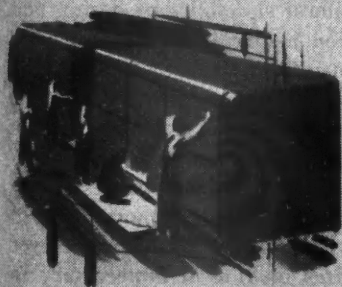
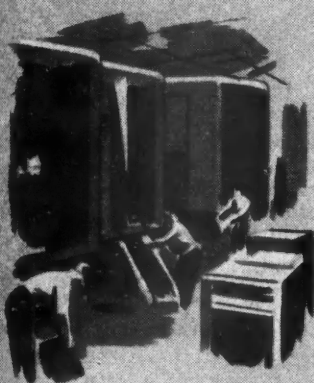
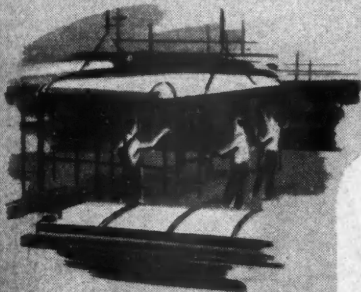
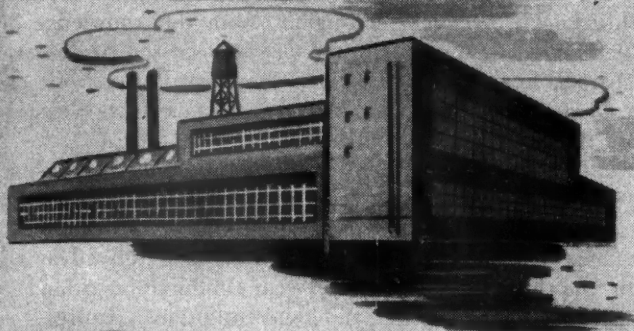
Fewer transmission shifts are required. Often when a shift down or up is required, the axle ratio can be shifted from fast to slow, or slow to fast, without touching the transmission shift lever and without declutching. And with the Easy Power Shift the axle lever is eliminated entirely.

Axle gear shifting can be accom-

plished just as readily when using engine compression as a brake on long down grades, as when pulling a full load. Power for "cold" shifting is ample.

Power for shifting axle ratio is furnished by a vacuum power chamber built into the axle. Double vacuum lines connect the power chamber with the selector valve on the dash. Vacuum supply may be direct from the engine manifold or from the vacuum brake system, and a reserve vacuum tank may be installed if desired. All moving parts of the shift, including the entire shifting mechanism, are fully enclosed and no lubrication is required.

(TURN TO PAGE 74, PLEASE)



It will pay you to
Get Acquainted
with Jim!

**...YOUR NEIGHBOR WHO BUILDS TRUCK BODIES
 AS YOU WANT THEM**

Here is a new idea in truck body manufacturing. It combines personalized service with mass production. "Jim"—your neighbor—has been selected as your local Ls body builder—because he has the ability, capacity, and understanding to intelligently handle your requirements for one... or a thousand truck bodies.

Dependable local service. Jim can take time to style your truck body to your individual requirements. He knows local conditions and regulations thoroughly, makes quick deliveries without shipping problems, does a factory job of repairing for you—with easily replaced parts.

Ls truck bodies made to your measure—but with mass production advantages. "Jim" is the only builder who gives you modern Lindsay Structure bodies—providing all the advantages of the die-formed, light metal construction, with its amazing strength-weight ratio. If you operate a national fleet, any of the Ls dealers can build identical bodies from master specifications anywhere in the country—and give you individual local service as well.

Get in touch with Jim—we'll supply the name of your local Ls dealer. Write to Lindsay and Lindsay, Adams-Franklin Building, Chicago 6, Illinois; or 60 East 42nd Street, New York 17, New York; Lindsay Structure (Canada) Ltd., 307 Dominion Square Bldg., Montreal.

LINDSAY
Ls **STRUCTURE**

U. S. Patents 2017629, 2263510, 2263511
 U.S. and Foreign Patents and Patents Pending

DISTRIBUTORS AND DEALERS THROUGHOUT THE COUNTRY

POWER SHIFT

(CONTINUED FROM PAGE 72)

When either axle ratio is pre-selected the power unit compresses a spring, which in turn slides the clutch collar into engagement with the slow or fast helical pinion when the torque load is removed by releasing the foot throttle momentarily. Spring pressure is great enough to insure positive engagement under all operating conditions, yet not so great as to impose undesirable shock loads on gear teeth.

Spring-loaded poppets position the shifting collar in engagement in either speed to insure positive action of Timken's "Shift-Lock" or lock tooth design, which prevents disengagement of the gears as long as they are under torque load. This poppet action also centers the clutch collar on the shifter fork to prevent wear of the fork by side contact with the collar.

Shifting of the 2-speed double reduction axle with the Easy Power Shift does not involve any special

driving technique. It is *not* automatic, and it requires the same driver thinking as shifting gears in the transmission. With the knowledge of engine speeds possessed by the average driver, the Easy Power Shift can be handled just as easily as transmission shifts.

Ability to "split" transmission gears with no more effort than shifting transmission gears alone enables the driver to take full advantage of every gear combination as load, speed and road conditions require.

New Timken Hydraulic Brake

Simplified design makes replacements and adjustments easier; ability improved

TO meet the demands for improved brake performance—demands caused by faster schedules, and heavier loads—The Timken-Detroit Axle Co. has developed a new hydraulic brake called the "DP" or Dual Primary type. For several years previous to Pearl Harbor Timken conducted intensive research and testing devoted exclusively to the development of this new design brake. The war interrupted its introduction.

Controlled self-energization, equally effective in either forward or reverse, is a major feature of the new "DP" brake. When brakes are applied, the natural tendency of the shoes to follow the drum is prevented by self-aligning abutment blocks which bear against the angled ends of the shoes.

Of the two-shoe type, the "DP" brake is so designed that both shoes act as "primaries" in either direction. Forward and rear shoes are therefore interchangeable and can be used in any position in any brake—a feature which simplifies replacements and reduces service parts stocks.

Equal pressure is applied radially to both shoes, permitting the use of a straight bore wheel cylinder with interchangeable pistons, cups and seals on both sides, further reducing replacement stock requirements.

Braking ability is said to be increased 30 per cent to 35 per cent

throughout the range of accepted hydraulic line pressures.

Other important advantages claimed for the new "DP" brakes include:

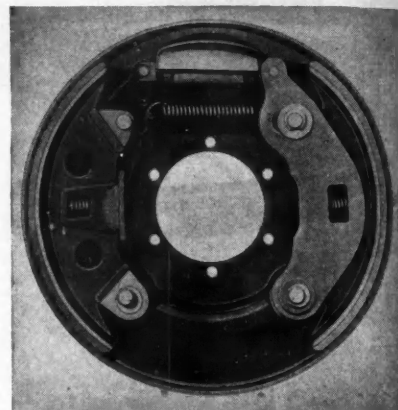
1. Longer brake liner life—full-length, equal-length brake liners distribute wear over maximum area. With both shoes equally effective in forward or reverse applications, the rate of wear is the same on both shoes. This makes it unnecessary to reline the brakes when only one shoe is worn down, and either throw away the partly worn liner or adjust the shoes for one new liner and one worn liner in the same brake.

2. Less fading—greater area of effective brake liner surface reduces pressure per square inch, lowers operating temperatures and maintains frictional value of brake liners more nearly constant, thus enabling "DP" brakes to make many more stops without "fading" of braking efficiency.

3. Equal braking ability and control in reverse—no increased braking effort or pedal pressure is required to stop in reverse or to hold the vehicle on upgrades.

4. Faster application and release—positive lever application of radial pressure to two identical floating shoes insures fast application and release, and eliminates high pressure areas and "grabbing".

5. Complete driver control—brak-



New Timken dual primary brake with upper half of one brake lever removed to show floating brake shoe, self-aligning abutment blocks and adjustable eccentric lower anchor pin

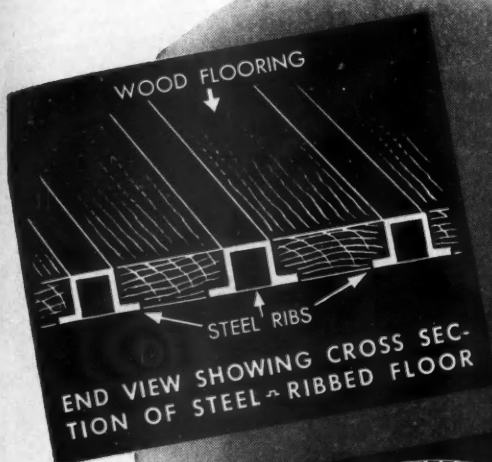
ing effort is effective immediately and is directly proportional to foot pedal pressure.

6. Simple design—small number of working parts, rigid construction and general simplicity of design and operation assure long life and easy, inexpensive maintenance.

7. Easier replacements—quick, easy removal of brake shoes for relining is accomplished by simply removing shoe retainer springs. Top anchor pins prevent movement of brake lever beyond limit of lever slots, thus making it unnecessary to use piston clamps to prevent residual line pressure from popping out wheel cylinder pistons when brake shoes are removed.

8. Easier adjustment—eccentric anchor pins are turned until brake liners are tight against drum, then backed off slightly to running clearance. No complicated "heel" and "toe" clearance adjustments are required.

This new brake is available now on certain vehicles being produced in 1944.



New Fruehauf STEEL- RIBBED Floor Construction

HERE'S a war-time engineering development you might ordinarily expect would be held for postwar Trailers. But, in line with our policy of incorporating improvements in design and construction as soon as they are perfected, Fruehauf now gives you a new and patented **STEEL- RIBBED** floor in freight vans.

This new floor is capable of withstanding a concentrated load of 1000 pounds per square foot—some 2½ times more than a conventional floor of the same thickness.

The new **STEEL- RIBBED** design is a radical departure from the old-fashioned, all-wood "tongue and groove" type. Hardwood floor boards are bolted down between 10 flanged steel ribs, running substantially the full length of the Trailer. The flanges of the ribs support the floor boards, and the steel joints are flush with the top of the floor . . . forming a smooth, long-wearing surface.

The ribs, which are of high-tensile steel, are welded to all chassis cross-members and form an integral part of Fruehauf's airplane-type frame construction. Being stronger than any individual board, they not only strengthen the floor but give added strength and rigidity to the chassis by serving as transverse braces to the cross-members.

Expansion or contraction of boards will not open up cracks in the floor since each floor board is backed up by metal throughout its entire length. And this reinforcement also serves to eliminate the "buckling" which frequently develops in conventional floors.

Besides increased strength and rigidity . . . with longer floor life . . . servicing is greatly simplified. Any single board can be replaced without disturbing the rest of the floor since there are no "tongues" or "grooves" to worry about, and matched lumber is not required.

4 IMPORTANT FEATURES OF THE NEW STEEL- RIBBED FLOOR

- 1 **GREATER STRENGTH.** Concentrated load capacity per square foot of floor more than doubled with practically no increase in weight.
- 2 **LONGER LIFE.** Metal reinforcement serves as "weather stripping" . . . keeps moisture out, eliminates "buckling" and cracking.
- 3 **INCREASED RIGIDITY.** High-tensile steel ribs are welded to chassis cross-members, forming an integral part of frame.
- 4 **EASE OF REPLACEMENT.** Any floor board can be replaced without tearing up the rest of the floor.

World's Largest Builders of Truck-Trailers

Service in Principal Cities

FRUEHAUF TRAILER COMPANY ★ DETROIT

SEPTEMBER, 1944

Use postage-paid card inserted in this issue for free information on advertised products

75



CCJ NEWSCAST

30% Overload of Synthetic Tires Reduces Mileage Markedly in Tests

A series of exhaustive tests completed by the Government Tire Test Fleet shows the marked extent to which an overload of 30 per cent reduces the mileage obtainable from synthetic rubber tires on drive wheels.

Three popular sizes of civilian highway truck tires were tested: 7.00-20 (10-ply), 9.00-20 (10-ply) and 11.00-20 (12-ply).

With the 30 per cent overload, the rating for treadwear averaged 84 per cent for all of the tires, as compared with 100 for operation with the Tire & Rim Association maximum recommended load, and the rating for carcass durability (blowouts, separations, etc.) averaged only 33.3.

The San Antonio, Tex., course on which the tests were made is 90 per cent concrete and 10 per cent gravel. The average speed on the concrete was 45 miles per hour, and on the gravel 30 miles per hour.

The tests were carried out under carefully controlled conditions and are averages of a sufficient number of tires of varied makes and types, according to the Office of the Rubber Director, WPB, to warrant their being considered accurate and authoritative.

Manning Tables Dropped, Replacement Schedules to Go

The Manning Table Plan, which has served as a basis for the orderly withdrawal of workers from war industries into the armed forces, has been terminated by the War Manpower Commission, the commission announced. At the same time, National Headquarters of Selective Service pointed out that Replacement Schedules, for the induction of the men, are being permitted to expire.

Lautzenhiser Leaves WPB Rejoins International Harvester

Fred B. Lautzenhiser, truck and trailer engineering consultant to the Automotive Division of the War Production Board since December, 1941, resigned as of August 5 to return to his former duties as sales engineer with the International Harvester Company.

Galvin Heads Tyson

Edward R. Galvin has been appointed president and a member of the board of directors of Tyson Bearing Corp., Massillon, Ohio. John K. Colgate, former president has been

made chairman of the board. Earl R. Earnest, executive vice president, also was elected to the board. Mr. Galvin formerly was general sales manager of R. G. LeTourneau, Inc., Peoria, Ill., and for 11 years was general sales manager of Caterpillar Tractor Co., also of Peoria. He is president of Highway Industries Association, Inc., and vice president of the American Road Builders' Association.

Mack Names 3 New District Managers

Appointment of three new district managers of the Mack truck company has been announced by F. F. Staniford, president of Mack-International Motor Truck Corp.

In the northeastern division, E. W. Turnbull, formerly assistant division manager, takes over the Akron branch as district manager, while E. W. Atherton, formerly manager in Akron, assumes the duties of district manager in the division's Albany branch. In the southern division, J. A. Bascle, formerly a marine engine salesman for Mack, is district manager of the New Orleans branch.

(TURN TO PAGE 78, PLEASE)



E. B. Newton, left, and Dr. H. L. Trumbull, right, rubber scientists of The B. F. Goodrich Co., Akron, are examining natural rubber extracted from Kok-saghyz, the Russian dandelion, which produces rubber comparable in quality to the best prewar far eastern plantation grades, according to Dr. Trumbull, director of B. F. Goodrich synthetic rubber research



Howard P. DeVilbiss, left, for several years vice president of The DeVilbiss Co., Toledo, Ohio, has been elected president and general manager

Allen D. Gutchess, right, has been elected chairman of the board and active senior executive of The DeVilbiss Co. He succeeds W. M. Booker, who continues a member of the board

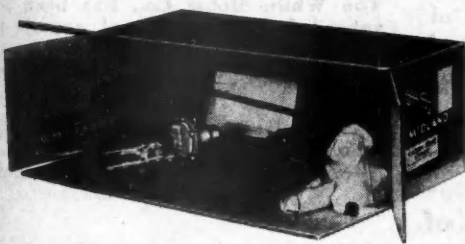


B. A. Mosling, left, was elected president and general manager at the recent annual meeting of Oshkosh Motor Truck, Inc. He was one of the organizers of the company more than a quarter-century ago. Wm. J. Hay, right, for 25 years active in the investment banking and brokerage business was elected vice-president and treasurer. The Mosling-Hay interests own a majority of Oshkosh stock



Whether You Prefer AIR or VACUUM... Get MIDLAND Dependability

COMPLETE KITS
in both AIR and VACUUM



ENGINEERED
ESPECIALLY for the

**G.M.C. • CHEVROLET
DODGE • DIAMOND T
FORD • INTERNATIONAL**

"CONTAINS EVERY
NUT, BOLT AND SCREW NEEDED!"

Midland Power Brakes give trouble-free operation — over a longer period of time — and at less cost. Midland Brakes are engineered especially for all makes of trucks and trailers. Their advanced design and rugged construction produce tremendous reserve power — assure extra long service.

Both Air and Vacuum brakes are backed by Midland's "Factory Rebuilt Exchange Plan." Sold and serviced by a nation-wide network of distributors and dealers.

THE MIDLAND STEEL PRODUCTS CO.

10605 MADISON AVENUE, CLEVELAND 1, OHIO

Export Department: 38 Pearl Street, New York City



MIDLAND

CHRISTENSEN

POWER BRAKES

"Those Who Know POWER BRAKES . . . Choose MIDLAND!"

CCJ NEWSCAST

(CONTINUED FROM PAGE 76)

Mitchell Heads Mack Research

Appointment of Dr. Walter M. Mitchell as director of research for Mack has been announced by L. C. Josephs, engineering vice president of Mack Trucks, Inc. Dr. Mitchell will direct chemical, metallurgical, electrical, mechanical, Diesel, fuels, lubricants and other research activities allied to the firm's products.



Before joining the Mack organization, he was chief metallurgist for the York Safe and Lock Company's special ordnance plant producing Bofors anti-aircraft guns for the U. S. Navy. Other positions held by Dr. Mitchell include that of metallurgical engineer with Carnegie Illinois and other U. S. Steel subsidiaries and a similar post with Republic Steel Corp. and its predecessor companies.

While he was with E. I. duPont de Nemours & Co. he introduced the use of stainless steel in the construction of plants used for the production of nitric acid, which revolutionized the manufacture of that chemical.

Frazer Heads Graham-Paige

Election of Joseph W. Frazer as chairman of the board of Graham-Paige Motors Corp. and the acquisition of Warren City Manufacturing Co., Warren, O., as a wholly owned subsidiary, was announced by Raymond J. Hodgson, president of Graham-Paige.

Following Frazer's election, he confirmed reports current in automotive circles for the past week that he and a group of New York associates had acquired a substantial part of the Graham-Paige stockholding of Joseph B. Graham and the Graham family. He said the company would undoubtedly re-enter the automotive field at the war's end.

Hodgson, Graham-Paige president for the past three years, continues in that capacity in the expanded organization and will also act as general manager of both the Detroit and Warren, O., operation.

Curtiss-Wright Purchases L.G.S. Spring Clutches, Inc.

W. C. Starkey, president and treasurer of L.G.S. Spring Clutches, Inc., which is now undergoing dissolution, has announced that assets of the company have been sold to L.G.S. Spring Clutches Corp., a wholly owned subsidiary of Curtiss-Wright Corp. G. W. Vaughan, president of Curtiss-Wright, announced that E. F. Theis, of Indianapolis, will be president of L.G.S. Spring Clutches Corp.

Immediate steps will be taken to expand the engineering and sales force of the spring clutch company, Mr. Vaughan said. Research and development of new spring clutch applications will be expedited.

Fruehauf Opens Branch in El Paso

A new factory branch in El Paso, Tex., designed to assist motor transport operators in western Texas and southern New Mexico, was established by the Fruehauf Trailer Co.

The branch, housed in a building 100 ft. by 120 ft. and equipped to maintain and repair all makes of trailers, is under the management of A. V. Tice, a transportation expert who has had extensive experience in the Fruehauf organization.

(TURN TO PAGE 144, PLEASE)

1944 Monthly Production of Trucks and Truck Tractors*

LIGHT			
1944	Civilian	Military	Total
January	21,479	21,479	21,479
February	21,095	21,095	21,095
March	21,081	21,081	21,081
April	19,481	19,481	19,481
May	19,338	19,338	19,338
June	20,830	20,830	20,830
Total—6 Months	123,304	123,304	123,304
MEDIUM			
1944	Civilian	Military	Total
January	1,985	12,812	14,797
February	1,799	9,840	11,739
March	3,317	8,404	11,721
April	8,245	6,542	12,787
May	7,310	7,012	14,322
June	9,322	6,620	15,942
Total—6 Months	29,977	51,330	81,307
HEAVY			
1944	Civilian	Military	Total
January	543	21,794	22,327
February	968	21,867	22,835
March	1,305	22,351	23,656
April	1,910	21,443	23,353
May	1,988	21,096	23,284
June	2,589	21,909	24,388
Total—6 Months	9,273	130,350	139,623
TOTAL—ALL WEIGHTS			
1944	Civilian	Military	Total
January	2,528	56,075	58,603
February	2,766	52,902	55,668
March	4,622	51,636	56,258
April	8,155	47,466	55,621
May	9,298	47,446	56,744
June	11,881	49,259	61,140
Total—6 Months	39,250	305,194	344,434

*—Automotive Division—War Production Board.



George H. Gruber, left, has been appointed sales manager of the original equipment division of the Burd Piston Ring Co., Rockford, Ill.

Elmer F. Eiseman, right, has been promoted to sales manager of the Replacement division of the Burd Piston Ring Co.



George H. Scragg, left, director of advertising and sales promotion for The White Motor Co., has been advanced from the rank of captain to that of major in the Civil Air Patrol, and made public relations officer of the Ohio Wing.

Karl A. Roesch, right, former sales manager of the Cleveland branch of The White Motor Co., has been made Cleveland branch manager.



R. W. Starr, left, has been appointed district manager of Studebaker's Dallas branch.

Earl W. Montgomery, right, has been named as Manager of Zone 4 for the Lynch Mfg. Corp., covering the southwestern states with headquarters in Dallas.



L. F. Weyand, general sales manager of Minnesota Mining & Mfg. Co.'s Adhesive & Coatings Division since 1936, has been promoted to general manager.

To keep fleets rolling efficiently
there's a definite need for

26 BASIC DESIGNS

To put the right ring in the right groove of every engine in your fleet, there's a definite need for the 26 basic designs developed by Sealed Power engineers. Each Individually Engineered Ring Set contains rings specifically engineered for a particular type and make of engine. Sealed Power has been refining these sets over five years—has been producing rings for car, truck and engine manufacturers over 30 years. For best results, re-power with Sealed Power motor parts. Sealed Power Corporation, Muskegon, Michigan and Windsor, Ontario.

*Piston Rings, Pistons, Cylinder Sleeves, Piston Pins, Valves,
Water Pumps, Bolts, Bushings, Tie Rods, Front End Parts.*

BUY MORE WAR BONDS!

not 2...
not 6...
but 26



SEALED POWER PISTON RINGS

BEST IN NEW TRUCKS! BEST IN OLD TRUCKS!

CCJ QUIZ

by **ROBERT F. BAHL**

Correct Answers on Page 148

Here's another series of CCJ Quiz Questions. You can test yourself, or you can match wits with your fellow-workers in the shop or office. Count ten points for each correct answer and see who makes the highest score. 70 is fair, 80 good, 90 splendid and 100 excellent. Answers are on page 148.

1

You'll find Motor Transport Marines from the halls of Montezuma to the shores of Tripoli, but their headquarters is at

- a. Parris Island, S. C.
- b. Camp LeJeune, N. C.
- c. Quantico, Va.
- d. San Diego, Calif.

2

What kind of job are our trucks doing on the fighting front? Lt. Gen. Brehon Somervell says that heavy trucks are as important militarily as

- a. 75-mm. cannon
- b. tanks
- c. Garand rifles
- d. B-29 bombers

3

How is the Army keeping the storage batteries on its trucks used on the Alaska Highway from freezing?

- a. by insulating the batteries with mineral wool.
- b. by mixing anti-freeze with the battery liquid.
- c. by passing the hot gases from the exhaust line over the battery.

4

Knock, knock! Who's there? Just the professor asking whether you know that your engine may be knocking a little more since Uncle Sam has limited the octane rating of regular

grade gasoline to

- a. 65
- b. 68
- c. 70
- d. 72

5

Miracles do happen. A government agency has actually decided to dissolve itself. Yes, this rarity of rarities is

- a. The Petroleum Administration for War.
- b. The Office of Defense Transportation.
- c. The Office of the Rubber Director.
- d. The Automotive Division of the War Production Board.

6

Trucks have served all kinds of purposes in this war, but one of the most interesting, we think, is their use as "mobile breweries." The distinction of being the first commander to include these breweries-on-wheels as part of the equipment of his ad-

vance combat units belong to

- a. General Omar Bradley
- b. Lord Louis Mountbatten
- c. Field Marshal Erwin Rommel
- d. Marshal Konstantin K. Rokossovsky

7

Connecticut has them now, and it is likely that many states will eventually be using license plates made of

- a. plastic
- b. aluminum
- c. tempered steel
- d. glass

8

Which of these in the Army menagerie would you identify with the M-29 Cargo Carrier, in secret production at Studebaker for almost two years?

- a. Duck
- b. Weasel
- c. Alligator
- d. Water Buffalo

9

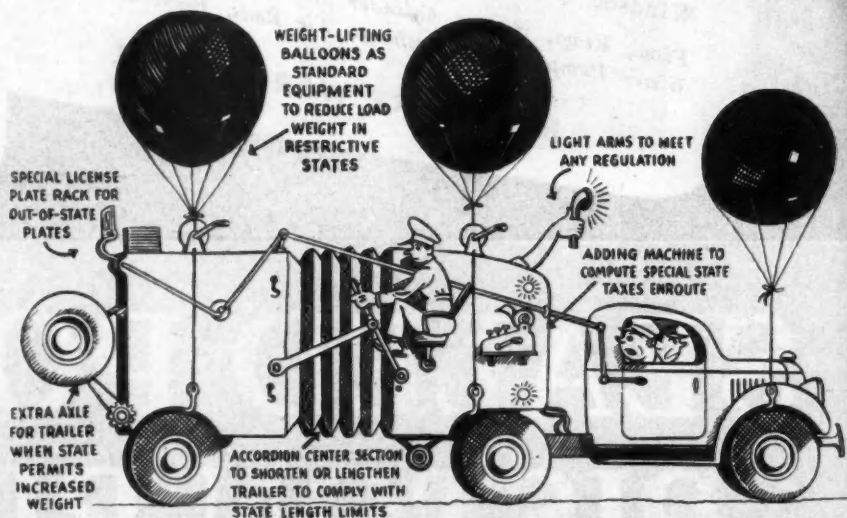
With which of these would you associate the name "Hydrovac"?

- a. brakes
- b. gasoline
- c. carburetors
- d. batteries

10

That this is a motorized war is borne out by the fact that our fighting forces require about one motor truck for

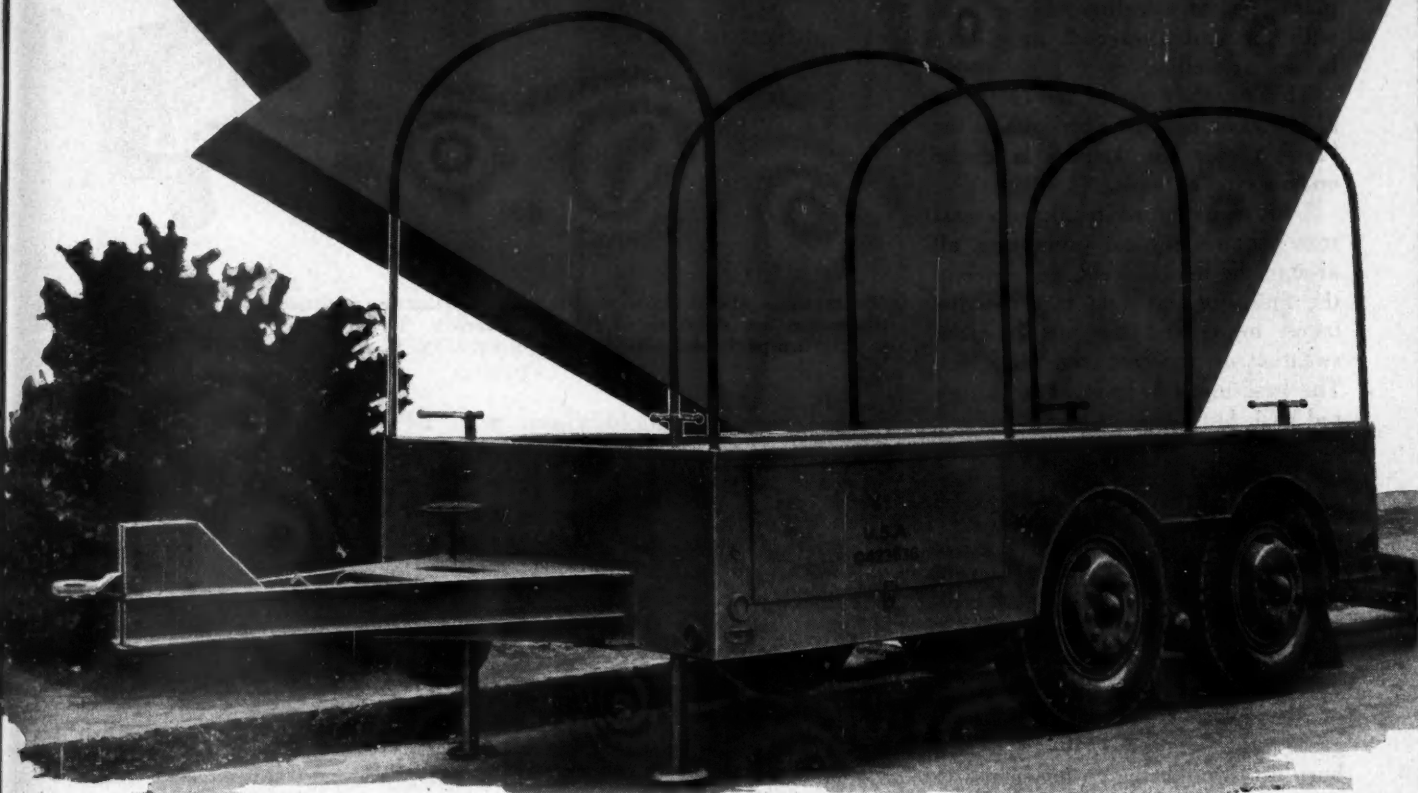
- a. every 10 soldiers.
- b. every 17 soldiers.
- c. every 28 soldiers.
- d. every 100 soldiers.



The "POSTWAR TRAILER" to fit all State Laws

Ike Doodleschmalz, M.E., D.D.S., independent industrial engineer de luxe, has submitted this design to the Fruehauf Trailer Co. as the answer to some of those conflicting state laws and trade barriers which prevent motor transport from properly serving the public. Maybe he has something!

SHULER AXLES FOR FONTAINE!



Yes, it's an Ammunition Handling Truck-Trailer for the U. S. Army, and you can guess that it follows the big guns even where most wheeled vehicles would hardly dare to go.

You can guess, too, that those two Shuler Axles serve the Trailer just as well as the

Trailer serves the guns. You can bet the Army knew *that* in advance!

What would *you* like to know about Shuler Axles, Shuler service, Shuler prices? We'd be mighty glad to send you the dope—straight and straightway!

SHULER AXLE CO., Incorporated, LOUISVILLE, KY.

Export Division: 38 Pearl St., New York, N. Y.

West Coast Warehouse: Ford & Derby Streets, Oakland, Calif.

Low Temperature CAST IRON WELDING

(CONTINUED FROM PAGE 57)

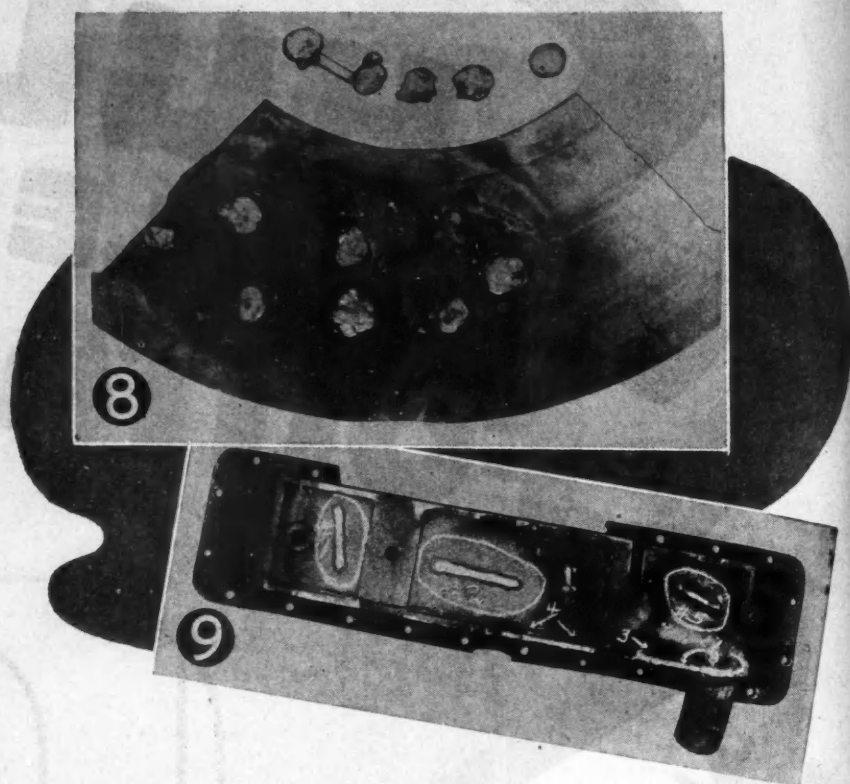
or sweat on, stellite and other hard surfacing materials on cast iron, either to build up an exhaust valve seat on an engine block or cylinder head or for other hard surfacing purposes, just as we can braze onto cast iron with bronze. The same brazing, plastering, or sweating can be done with the cast iron rod, instead of bronze or stellite.

This sweating on of the cast iron filler rod on exhaust manifolds is the "bromo" for the welders headache on this type of work.

Low temperature repairs on cast iron require a local preheating all around the line of weld, and beyond the finish of the weld to some distance, to expand the metal before sweating on the cast iron filler rod. The base metal is brought to a high red heat, but below its melting point. On this red hot, unmelted surface we melt, spread and plaster the molten cast iron filler material.

The advantages are many. Hard spots and blow holes on most of this type of work arise from the base metal when melted, which release trapped gases or the residue of the burned impurities on the inner walls of the exhaust manifold, generate gases which continuously belch and burp up through the molten mass of the manifold base metal. The hard spots are the remains of old horse shoes, fire grates or other junk metals used for the molten metal employed in the casting of these manifolds. When molten, the hard spots float up to the top of molten filler rod and spread over the weld area. By not melting the base metal and only sweating on the filler rod, as described, we leave all the belching, burping, hard-spot-producing impurities trapped where they are.

The fine-grained material of which most of our cast iron filler rods are made, is free from this trouble-making refuse. While occasionally the rod material may cause a hard spot or a blow hole, it is not often enough to find fault.



Illustrations above show results of experiments outlined in the article. Fig. 8 illustrates the strength of "plaster" welds. The base metal did not break and lumps broke within themselves. Fig. 9 shows surfaces obtainable

The exhaust manifold shown in Fig. 1 was broken in two pieces. Preparation consisted in grinding a 90 deg. V on the surfaces marked 1 and 2. The two halves were clamped to a heavy piece of 1x6-in. plate, butted close so that the two unchipped halves had true face-to-face contact in line.

Then, using a large, No. 5 welding head on the torch, we started at No. 1, heated to a high red, heated the side below No. 1, and made our sweating weld. As we progressed around this short circumference, we kept the welded area behind the torch also at a high red heat.

When the welding was completed (on the outside only), we again heated the entire weld to a high red heat. It cooled on the bench and the high points were brought down to their true surface with a file. Examination of the inside of a job similar to this shows the broken edges pulled smack up to where they belonged. There were no blow holes and no hard spots; no distortion and no machine work.

This is about the simplest type of manifold to handle. Of course, on this job blow holes would have been inconsequential. However, they can

be removed by letting the job cool slightly, then either melting the spot again and plugging it with weld metal or just skimming over the surface of the weld metal so that it runs together and closes the hole.

The weld was twice as wide as the material at the break is thick, and as thick as the wall of the manifold.

The next manifold, Fig. 2, was prepared as shown. The owner of the part wanted to be fancy and remove the excess weld metal. Small unground points of contact for true alignment of the broken parts are shown between the arrows. After tack-welding, the same method of flowing on the filler rod as employed in our first job was duplicated.

The area between the chalk lines, Fig. 3, was heated to a high red heat for contraction strain relief and even cooling. When cool, the part was steel grit blasted to show the absence of blow holes.

Fig. 4 shows another type of exhaust manifold. This job had been previously bronze welded. This is one of the few places where the use of bronze results in failure. Bronze loses its strength above 700 deg. Fahr., and lets go its hold on the

(TURN TO PAGE 84, PLEASE)

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BLACKHAWK

Low Temperature CAST IRON WELDING

(CONTINUED FROM PAGE 82)

Fig. 10. Reducing bushing supported by cast iron applied by "plastering".
Fig. 11. Area within chalk line was rebuilt with cast iron. Area within dotted line was reheated after welding.
Fig. 12. Worn contact surface on this clutch pressure plate was plastered with cast iron

base. In this case, some of the bronze was imbedded in the pores of the iron, but, ignoring the fact, we steel grit blasted and with our large, No. 6 tip preheated the area outlined with chalk and all the back and under surfaces. Then we made our sweat on weld, as shown in Fig. 5. Next, we heated all around the previously heated area and allowed the job to cool on the bench.

This is a clumsy, unhandy part to handle, even with a helper. Our home-made turntable, described in our previous article, proved indispensable.

The three piece exhaust manifold shown in Fig. 6 had both of its end sections broken in two pieces. The large, heavy plate has been drilled so that either end of this broken manifold can be bolted to it. In Fig. 7 part No. 1 of another similar manifold is shown bolted to the plate, and the plate, in turn, is bolted to the turntable with the bolt indicated by arrow in Fig. 6.

So, with the sweat-on weld and this turntable exhaust manifold welding headaches are a thing of the past. Hundreds of these manifolds have been done in just this way, and, just like the welder that wondered why his fire grate welds stand up, we also are wondering why these exhaust manifolds do not come back broken. Keeping our fingers crossed, up to now none has returned for welding in the area in which we have made our welds.

Most of these manifolds do not require any machine work, not even the elongation of a bolt hole. They seem

to stay in almost perfect alignment with this method of handling them. A flux-coated cast iron filler rod also would make a big difference on a job of this kind. It would be a time as well as a gas and oxygen saver.

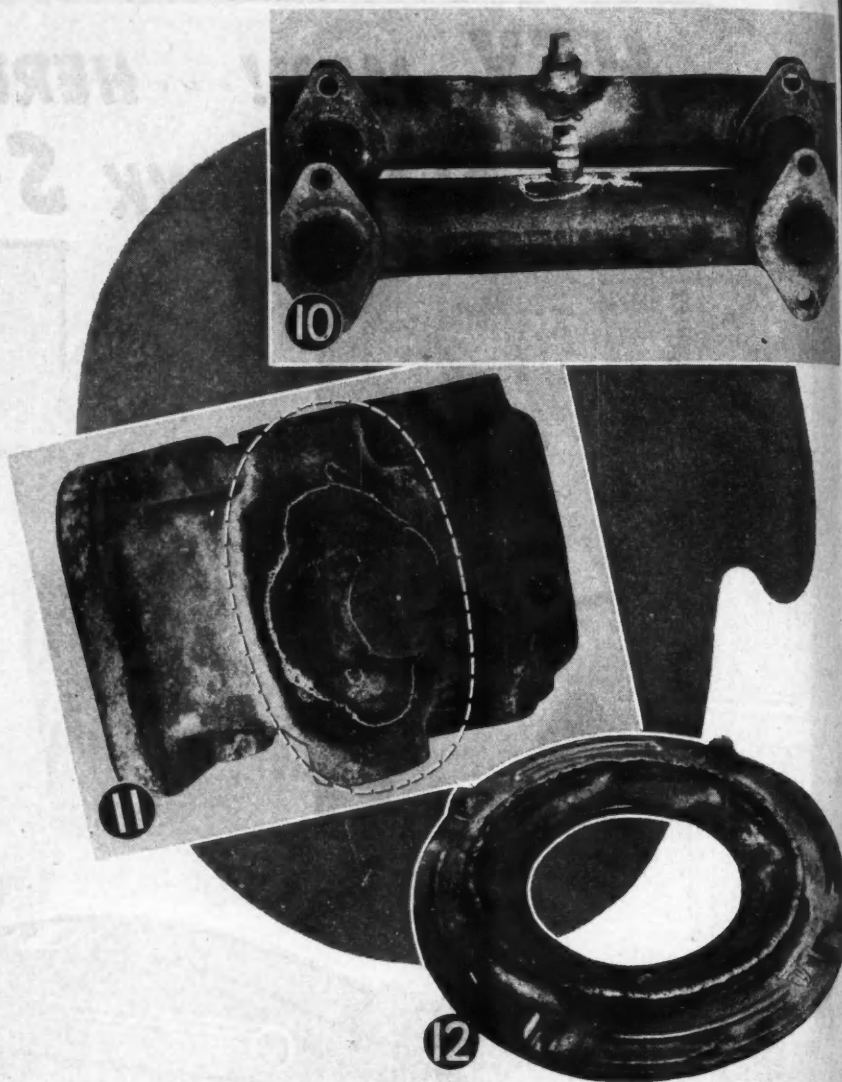
This about finishes the use of this old idea on exhaust manifolds. It has other uses and possibilities. Before we deal with them, a few experiments should be made which will, I am sure, result in the greater use of this welding technique.

In our first article, which appeared in the June issue of *COMMERCIAL CAR JOURNAL*, we showed a small power take-off housing with several lumps of bronze and one of cast iron built up on it without cracking the base metal. The cast iron lump in that photograph, which broke within itself, was applied with the plastering, sweat-on welding procedure. Duplicating that same test on a piece of

an old, 5/8-in., cast iron clutch pressure plate, shown in Fig. 8, we build up six lumps of cast iron. Again, the base metal did not break, and each of the cast iron lumps broke within itself when struck free. The spots were heated to a high red heat, but not melted, then the cast iron filler rod was melted and flowed onto the red hot spots. This illustrates the strength of this adhesion or plaster weld. I believe some of the filler rod does sink into the hot base metal in much the same manner as bronze does when it is used instead of cast iron.

Whether this is merely surface adhesion or whether the weld metal does penetrate to any extent into the base metal, I am in no position to determine at present.

Regardless of what really does take place, we have found many uses
(TURN TO PAGE 87, PLEASE)



LOW TEMPERATURE CAST IRON WELDING

(CONTINUED FROM PAGE 84)

for this type of weld. Up to now, it has given results on preheated jobs, welded in the fire, as well as bench jobs.

The surfaces to be had with this type of weld are easily demonstrated with the following experiment: The junked radiator bottom tank shown in Fig. 9 has had a number of plaster or adhesion welds made on its surface, done as we have been doing all this work up to now. The base metal was brought to a high red heat, but not melted, then the filler rod was melted on this red hot undersurface, shown by welds as numbered.

Had we melted the base metal then melted the rod into it, we would have had cracks aplenty. Why this thin surface or the previous thick surface does not crack with this high localized heat, I do not know. The fact that it does not crack is taken advantage of.

A close look at welds Nos. 1, 2 and 5 shows an absence of hard spots or blow holes. These same welds, after dropping to room temperature, have been filed; welds Nos. 5 and 6 have been chipped with a hand chisel.

The water manifold illustrated in Fig. 10 has been drilled and tapped for the insertion of a reducing bushing, so that a water line can be run to a water cooled type air brake compressor. The wall does not have enough stock to get a good tight joint. This bushing can be made tight and strengthened by running a little bronze around it. But why bronze, when we can use cast iron rod in the same way at half the cost of bronze?

After having done some 50 of these water manifolds, without a comeback, both with bronze and cast iron rod, it is safe to say that one way is as good as the other, but one way is less expensive. The method of applying either metal is the same.

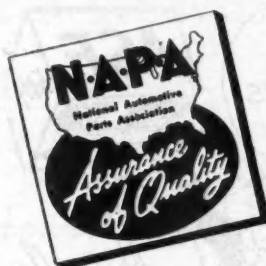
Power take-off housings of either cast steel or cast iron have been re-conditioned with the cast iron rod and the plaster weld. The one shown in Fig. 11 had the entire area within the chalk mark rebuilt on the bench with cast iron rod. After the welding was completed, the area within the dotted white line was heated with a large tip and allowed to cool on

the bench. The surface has been milled and center-punched for drilling and tapping for the insertion of a new grease fitting. Again we show the absence of blow holes, which we still maintain come from the impurities in the base metal being freed.

This is another job that can be done either with bronze or as shown. It's the difference of opinion that makes or breaks any idea. Some machinists would rather do the machine-work required here on cast iron than on bronze. Therefore, the machine-

ability of these welds will have to be determined by the user in his own shop. Should the machinist complain about the piece being too hard, we merely put it in the preheating stove, bring it to a high red heat, and allow it to cool off overnight. This usually softens it to the machinist's satisfaction.

Carboloy tool bits seem to give better all around service on this type of welding than do other tools. Regarding welding rods, any of the good
(TURN TO PAGE 88, PLEASE)

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LOW TEMPERATURE CAST IRON WELDING

(CONTINUED FROM PAGE 87)

gray iron rods sold by the leading manufacturers of welding rods, gives good results. One alloy rod gives superior results, and another alloy rod can only be handled by grinding. So, a trial of several rods may be the answer for any one having much of this work to do.

The clutch pressure plates shown

in Figs. 8, 9 and 10 in the article which appeared in the August issue, also can be reclaimed with this plaster weld method, as shown in Fig. 12. Preparation consists of removing about 1/16 in. off the top surface then the cast iron rod is melted and flowed onto the red hot unmelted undersurface. The sixteenth of old metal is removed so that, when the machinist goes to work on the piece, the tool bit will only have to work on the newly added cast iron filler metal.

Quite a few of these plates have been done in this way. None has cracked into the base metal, nor did any have cross-the-weld contraction cracks. Also, blow holes and hard spots are conspicuous by their almost total absence, which I doubt would have been the case had we stirred up the base metal and made a true weld.

While these plates can be done with cast iron rod, quite a bit more time is used by the welder. Where lots of a dozen are done at a time, bronze is preferred—owing to the speed of application of bronze, as against the almost double time needed for the application of cast iron. Moreover, flux coated rods, both of cast iron and bronze, also cut down enough time to warrant the small extra cost of their purchase.

END

(Please resume your reading on P. 58)

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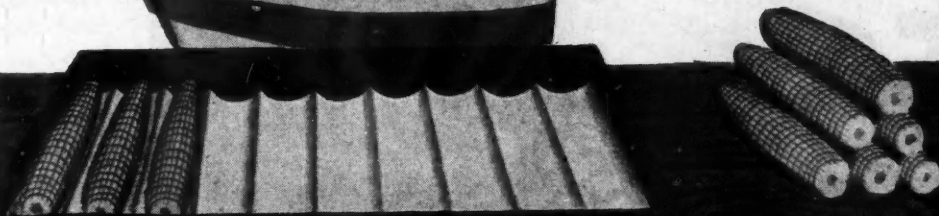
AUTOMOTIVE DIVISION, 400 N. MICHIGAN AVE.,
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New England Transportation Co. Announces Personnel Promotion

Appointment of Harold Price and Leon H. Corey as assistant general managers and of Morris Freedman as supervisor of safety, with headquarters at Boston, was announced by Vice-President R. H. Palmer of the New England Transportation Co. Price has been promoted to assistant general manager in charge of passenger operation and traffic; Corey has been named assistant general manager in charge of freight operation and Freedman will serve as supervisor of safety. Oliver Quintin will serve as operating assistant to Price.

Other appointments include the naming of Curtis A. Marvelle as superintendent of Cape Lines, with headquarters at Buzzards Bay; Fred H. Graham, as supervisor at Hyanis; and William M. Gillies and Leo G. Trudel, 169 Merrimac St., New Bedford, as assistant supervisors at Buzzards Bay.

George M. Wallace has been appointed acting superintendent of passenger operation for Rhode Island Lines; Sherman M. Cota, as acting superintendent of freight operation for Rhode Island - Massachusetts Lines; and Leo C. O'Rourke and James J. Southworth have been named supervisors of Rhode Island Lines.



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MAINTENANCE MEMOS FROM COAST FLEET

(CONTINUED FROM PAGE 41)

nance men that are competent and steady, we are seeking at present. Two shifts are worked, with hours starting at 8 a. m. 5 p. m., one mechanic on duty balance of the 24 hours.

Road repairs are all handled from shop and this includes any major breakdowns. Accidents are immedi-

ately covered by experienced investigator who also handles the insurance.

Equipment consists of both gasoline- and diesel-engined units. Because they are so varied and also because it has not been found necessary to break down figures for each type of truck or engine, fuel consumption figures are only approximate. And they are these averages on the two-engine types: $3\frac{1}{4}$ miles using regular type gas; and $3\frac{1}{2}$ miles to 5 miles on the diesel engines using 44 cetane

with pump set at 28 cc as near as the fuel will allow. The spread in miles on the diesels is because long distance hauling is by them, and also there is a lot of it within limits of heavy traffic at a very slow speed.

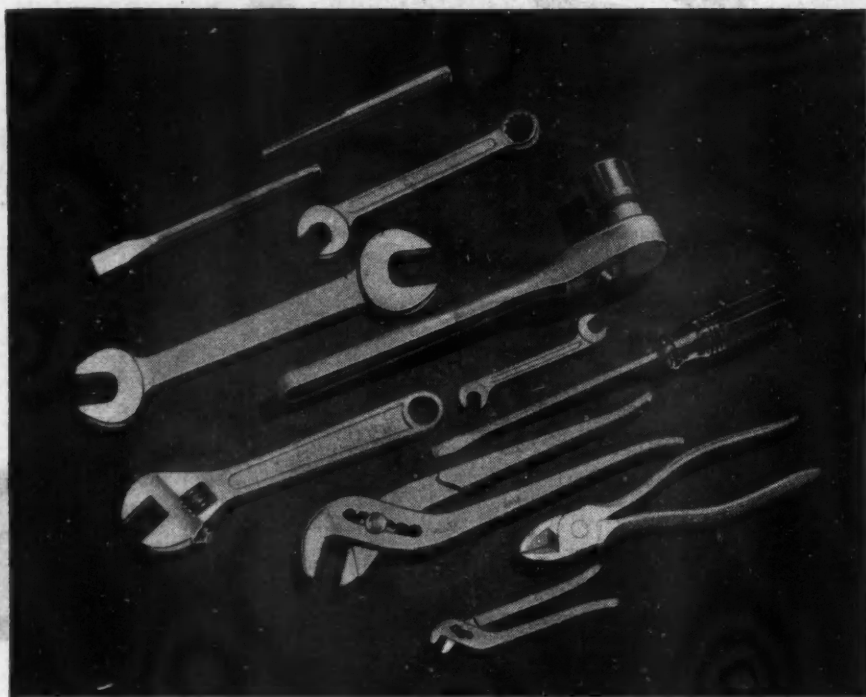
Preventive maintenance was put into effect about 15 years ago on the basis of 500, 1000, 5000 10,000, 20,000 and 30,000 miles. Of course, due to mileage, as well as time, being a guide in our varied type of work, this is modified in exceptional cases to fit equipment usage. But basically this schedule is adhered to as closely as possible. Drivers' reports play an important part in our keep-'em-on-the-road plan. This important report is stressed with drivers and it gets careful attention by me personally when received. A copy is shown, also the *Shop Costs* form (one for each piece of equipment) to which the work done is transferred, giving a complete unit record instantly available.

Our 500-mile check includes: transmissions, universals and flange bolts and differentials; lights and reflectors; oil levels compressor and motor; for oil leaks; air lines, connections and bleed air reservoirs; fire extinguishers and flares; tanker static chains and drags on tankers; fuel and water and hammer test tires.

At 1000 miles, check includes those of 500 miles, plus: fan and generator belts and bracket bolts; complete lube job; brakes, controls and valves; torque arm and drive chain adjustment, drive sprockets and bolts, axle flange bolts; trailer hitch, pole and safety chain; add anti-rust compound to radiator water; wash battery terminals, add water if necessary.

Both the 500-mile and the 1000-mile checks are included in the 5000-mile check, plus: ignition timing, points and wiring, lube distributor, test battery voltage; spark plugs, clean if necessary; remove valve doors and check valve clearance while hot; reset injectors, check fuel pressure on diesel engines; cylinder compression and head nuts; generator brushes, clean commutator if necessary; all switches, wiring horn, windshield wiper, starter, regulator, fuses, etc.; see that compressor valves are free (but do not oil), look for line leaks; use pressure gage on gasoline engine fuel pumps, clean filter bowls and screens, check lines and connec-

(TURN TO PAGE 92, PLEASE)



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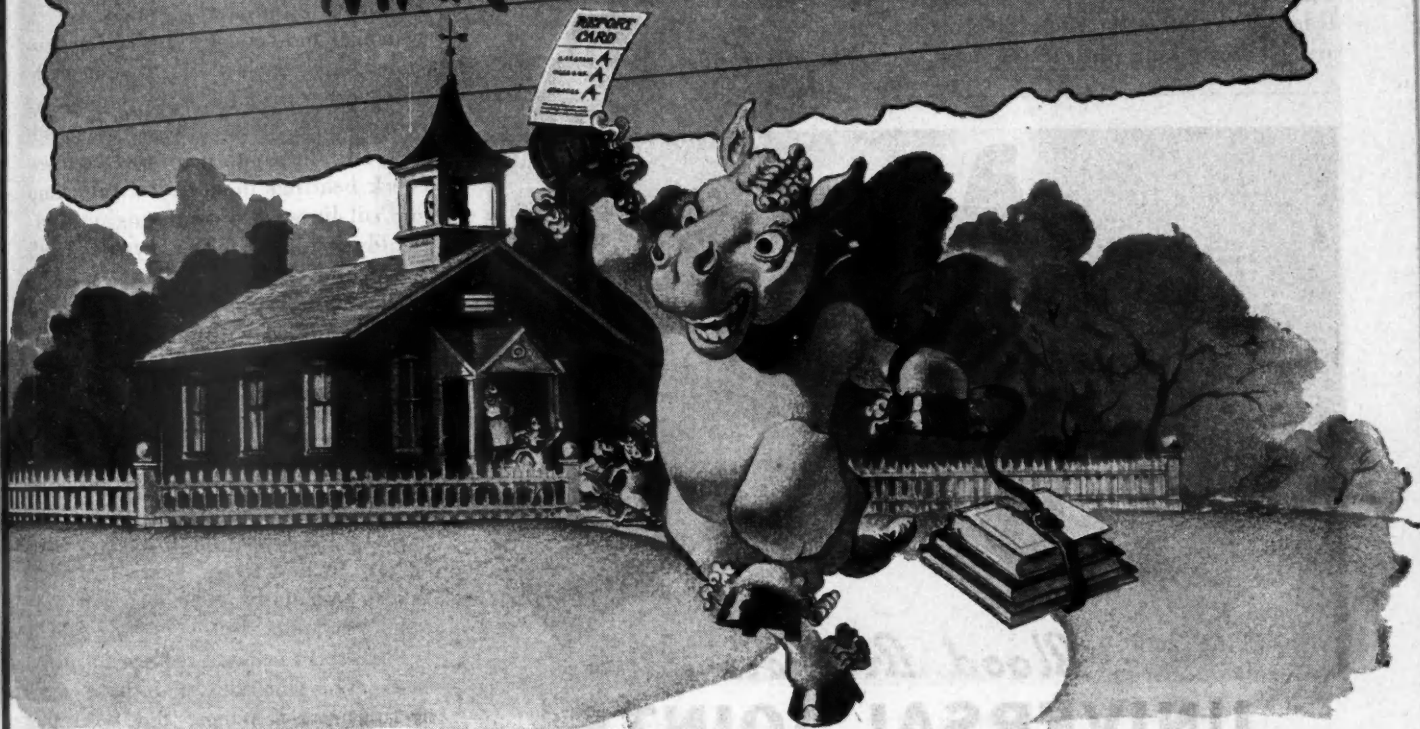
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IT'S A PRIVILEGE TO BUY WAR BONDS

MAINTENANCE MEMOS FROM COAST FLEET

(CONTINUED FROM PAGE 90)

tions for leaks, check carburetor; clutch brake for pedal clearance; all brakes, truck and trailer, adjust if necessary; each wheel bearing adjustment, including wheels without brakes; front axle assembly along with steering assembly, including U-bolts, shackles, tie rods, steering arms, pitman, king pins, wheel stops,

etc.; all spring assemblies without exception, including shackles, bolts, hangers, etc.; include brake boosters and air chambers mounting attachments, etc.; oil pressure; flush radiator and then add anti-rust compound; water pump packing, radiator hose and clamps; motor mounting, exhaust manifold, exhaust pipe and muffler; inspect tires for proper mounting, matching and for wear. Also remove and clean air filters; change oil filter bag.

The 10,000-mile check is a repeti-

tion, but includes worm drive rear ends which are given oil change, flushed, and sample of old oil saved for submission to laboratory testing service. The same applies to the 20,000-mile check with the addition—on gasoline engines drop pan and check bearings, piston pins, oil pump and oil lines; also clean engine.

This brings us to the 30,000-mile check, which is all-inclusive, plus the following: pull all wheels, check bearings and repack; check transmissions and clutches, drain and flush, checking thoroughly by removing covers and plates, then refill with new oil; drop pan on diesel engines, check bearings piston pins, oil pump and oil lines, also clean engine thoroughly; flush cooling system with compound.

These inspections have been found to keep our road failures to a minimum. And such road failures, when they do occur, are less serious because of these scheduled inspections. They prevent extensive damage to engines and parts and are worked out to give the proper safety margin for our type of heavy hauling. It would be rare to find stress conditions such as are our daily experience in any other transport fleet.

Parts have been a problem in many cases. This includes main and connecting rod bearings. But with the improved copper-alloy bearing metal allotted by the Metals Division of the War Production Board, 89 per cent tin content, we have found a general improvement by using the metal as is. This applies to all makes of engines.

Using the new type valves, we find that when properly seated and given proper spring tension, though the service life is shorter, they give fair service. We have never found them a major trouble item. They are refaced as long as stem is not too badly worn. When it is, we discard them. The make of engine appears to have little to do with it.

There is an improvement in crankshaft service with the application of the new bearing metal. As with the wartime metal they had to be ground oftener and gave not to exceed 65 per cent of pre-war service, now they compare favorably, but with time to tell.

Fan belts and water hose life is cut 35 per cent, or there about. En-

(TURN TO PAGE 94, PLEASE)



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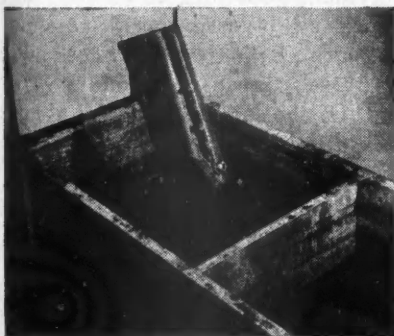
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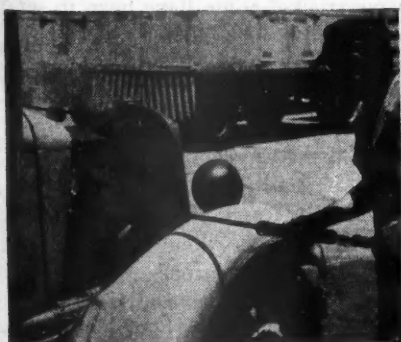
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MAINTENANCE MEMOS FROM COAST FLEET

(CONTINUED FROM PAGE 92)

gine gaskets give no specific trouble, but do require more tension. Radiators are doing all right, though it is a problem to get new ones to replace those damaged beyond repair. Water pumps are giving no trouble. We are getting brass impellers and are using some packless pumps. In diesel engines we have found the cast

iron to be as good as brass impellers.

Clutch linings are a small problem with experienced drivers. With others, they may not wear as long as the regular type. Our units are hard on clutches unless a man is familiar with this heavily loaded equipment of ours.

Transmissions and rear axle shafts, based on per ton per hour basis, may be giving some extra trouble, but we lay it largely to longer hours per unit. And there's some extra heavy loading.

We have our own tire department and do all work except recapping and sectioning. Sectioning is not at all satisfactory. Recapping is done before strip shows. Present tires are less resilient, break quicker and care must be taken to get small cracks or breaks before they develop fractures. Service is about 50-60 per cent of all-natural rubber.

Engine tune-ups are not at any scheduled mileage or time. Service used in and drivers' reports determine. If oil or fuel use becomes excessive, or there is power loss, they get a going over ending up with road test. Instruments are used of standard factory make with specialist making tests. Trip recorders are used on all units. Spark is set for fuel use, retarded; timing is about standard.

Everything is salvaged, reconditioned and placed in stock for future use. Nothing is wasted that can be reclaimed. This includes the purchase of used army equipment parts for rebuilding. At times almost entire trucks are built up of these used parts. This includes bodies in our own body shop. Heavy parts are necessary and at times this is the only way we can get them.

All oil is reclaimed and all oil changes and type are by instructions from oil testing laboratory. Samples are supplied them and they advise everything pertaining to oil use. Refined oil is used in all gasoline equipment, but only new oil goes into the diesels because an additive is used. Of the large number of Cummins diesels in use, many of them have passed beyond the million-mile mark. They're still doing an excellent job. Replacement oil filters are used on every engine. They are changed as oil laboratory advises, the same as gasoline engines.

Cummins 150-hp. diesels are used in 41 heavy road tractors and in 31 heavy trucks. Some have been in service for 10 years. They are rebuilt as necessary, depending on amount of service, etc. No schedule because of varied work. Pump setting is as near 28 cc as we can make it and effort is made to keep temperature between 160 and 180 deg. Pistons are discarded when sleeves are changed or taper exceeds .010 to .012. Crankshafts are replaced when they reach .005 flat. We try never to let

(TURN TO PAGE 96, PLEASE)

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MAINTENANCE MEMOS FROM COAST FLEET

(CONTINUED FROM PAGE 94)

them go beyond. And we do not favor metallizing of shafts. Our work is too heavy and the pull too constant. Instead they are ground to undersize bearings. This has been satisfactory practice.

Drive lines are equipped with standard tubing except for the heaviest equipment. Then extra heavy

tube is used to prevent twisting. Four-wheel trucks with double reduction differentials give little trouble, but the six-wheelers with four-wheel worms give trouble because of the radius rods being mounted on differential assembly. They loosen in the housing, wearing housing so they cannot be kept tight. We take them out at major overhaul of trucks, build up attachment on both case and axle shaft housing, then reattach for trouble-free operation. Oil for worm lubrication is SAE 240.

Axle shaft breakage is not excessive for us, and spares are carried when we can get them. Rear axle housing and axle sleeves bend or fracture at times but we do not consider it excessive. Heat is problem at times account heavy loads. Wheel bearings give little trouble. Our maintenance stress is our insurance. Brakes are mostly air, but use some vacuum. No particular trouble because of maintenance, again. Pressure is at 110 lb. with 80-90 lb. on diaphragm. No change has been made in lines.

We do our own brakes. Lining is used at all times. Lining life varies as everything else with this heavy work. But we believe it is reasonable. Wheels are usually realigned when brakes are relined. Block lining is used, from 2 to 7 in. Front brakes are used on much equipment. Steering problems are low because of keeping units in good shape.

All of which points to the efficiency of and the definite need of a complete and *used* system of proper scheduled preventive maintenance from the start of the use of any type of automotive equipment. And when that equipment handles *all heavy loads* with plenty of lugging, then you do, or quit!

END

(Please resume your reading on P. 42)



Repairing badly battle damaged Flying Fortresses at this Eighth AAF bombardment base in England would be all but impossible were it not for equipment like this. Federal C-2 wrecker. It is responsible for cutting down the time and effort in getting battered bombers back on an operational status, such as swinging outer wing panels into position and holding them there until they are securely fastened, loading Fortress fuselages onto "Queen Marys"—the long flat top trailers, etc. Affectionally known as "Babe", it is always on hand in case a plane crash lands, or else leaves the runway and becomes stuck in the soft ground. Toughest assignment, to date, has been unloading eight-ton Diesel engines from railroad flat cars; maximum load limit is set at seven-and-one-half tons

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A NEW ... BETTER PUMP for Volatile Liquids

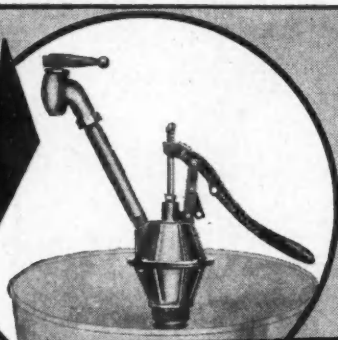
Specially designed for pumping alcohols, anti-freeze, paint thinners, etc. Has all the tested and proved features of the No. 700 BISHMAN High-Speed Diaphragm Type Pump—the trouble-free, long-lasting diaphragm operation—efficient, durable, self-priming, self-draining, fast pumping.

POSITIVE SHUT-OFF VALVE on fill spout prevents escape of vapor and liquid. Automatic drain back. Fill spout of convenient height for filling measuring cans and containers.

FITS ALL DRUMS with 2", 1½" or ¾" standard pipe thread openings—no bushings. Has adjustable suction pipe adaptable for 15 to 60 gal. drums, including drums with ¾" openings.

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BISHMAN
NO. 750
**LEAK-PROOF
PUMP**



SIMPLICITY . . .

The simplicity of the Vickers Hydraulic Power Steering System is evident from the typical application shown below. The System consists primarily of an engine-driven hydraulic pump, a pressure overload safety valve and the booster unit.

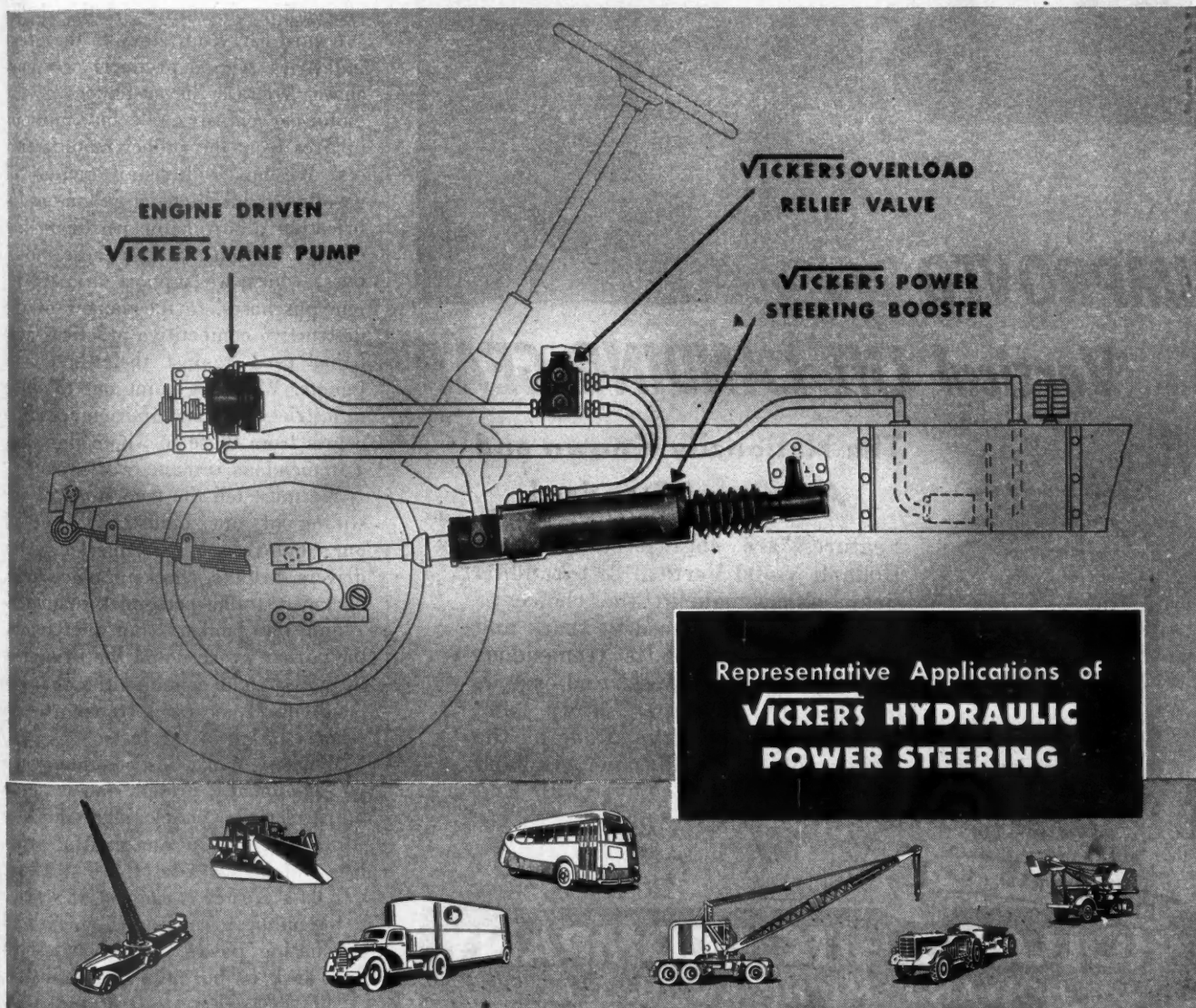
The booster is essentially a double acting hydraulic jack with integral control valve which instantaneously responds to the slightest steering wheel movement . . . directing oil under pressure to the booster cylinder and producing linear movement of the attached drag link. The steering effort is not transmitted through the steering gear.

Providing effortless, positive and shockless steering of even the heaviest vehicles, the Vickers Hydraulic Power Steering System has been in use under the most adverse operating conditions for the last 14 years. It assures greater driver

Another Important Advantage of **VICKERS HYDRAULIC POWER STEERING**

efficiency by reducing fatigue to a minimum . . . it is easily applied to existing chassis designs . . . it provides automatic overload protection for both steering linkage and hydraulic system . . . it is automatically lubricated. Ask for new Bulletin 44-30 describing all the advantages of Vickers Hydraulic Power Steering.

VICKERS Incorporated • 1418 OAKMAN BLVD. • DETROIT 32, MICHIGAN
Application Engineering Offices: CHICAGO • CLEVELAND • DETROIT • LOS ANGELES • NEWARK • PHILADELPHIA
ROCHESTER • ROCKFORD • TULSA • WORCESTER



THE PROBLEM BEFORE EMPLOYERS, ETC.

(CONTINUED FROM PAGE 49)

they must grant it the right to compete, under fair rules, with all other forms of transportation. Government generally must be made to see this industry as a potent national servant; government must remove the arbitrary and artificial barriers that have been erected selfishly to stifle its growth and prevent it from giving us

full service to the country.

Railroad Practices

Competing types of transportation must stop appealing to the ignorance and prejudice of uninformed legislators and congressmen to injure our industry, they must be prevented from using chicanery to erect barriers that impede the free flow of commerce on the nation's highways. The barriers that have been erected must be removed, for they do not permit

fair and open competition; they do not serve the public interest; they are detrimental to public welfare. There is no legitimate excuse for the destructive practices that the representatives of the railroads have adopted to block honest competition.

There is a place in our country for every form of transportation. They must compete with each other in the public interest; they must survive and prosper, or fall and be forgotten, according to their value, or lack of value, to the public. No form of transportation must be retarded by schemes hatched in the minds of selfish competitors, and selfishly enacted into law, at the expense of the public welfare. Our industry must solve this problem.

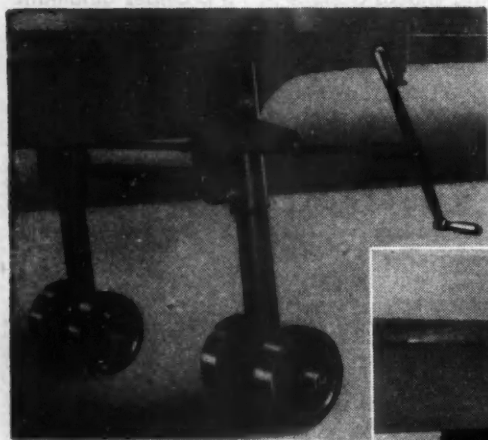
New Policy Needed

We must develop the kind of administrative policy, by our common efforts, that will stop such nefarious proceedings in our legislative halls. We must carry our story to the great industries whose products we purchase. We are the customers of the motor-car industry. We buy millions of tires from the rubber manufacturers. We buy billions of gallons of gasoline and millions of gallons of lubricating oil from the petroleum industry. We must arouse these industries, which we support in part by our purchases, to the danger of the destructive competitive practices now being used against their best customers. We must point out to these industries that this unfair competition comes from those to whom they pay a tremendous revenue every year.

We must tell the true story of the stifling of our industry to all of our employees across America. Our drivers, helpers, checkers, office help, dockmen, traffic personnel, managers—and the bankers and merchants, the corner grocers and the druggists in thousands of communities that depend entirely on truck transportation—must be given the facts.

When we make this possible, when we intelligently present our case to the American people, the shackles which now prevent our rightful progress will be stricken off. The result will be a greater expansion of service to the public, greater employment and purchasing power. The benefits will flow back to business and industry.

(TURN TO PAGE 100, PLEASE)



HOLLAND



IMPROVED

Vertical Lift LANDING GEAR

The Nationally Known and Approved Standard

Load Lifting Power
unequalled by any
other type.

18" ground travel
clearance—6" more
than others.

Safe—Simple—Durable
Fast and Easy.

Features are engineered into the Holland V-400 Vertical Lift Landing Gear which make it the choice of those most experienced in truck and trailer operations. Its tremendous lifting power, with speed and ease, is matched by its great safety, simplicity, and durability. Made by the makers of the well-known Holland Fifth Wheel and Holland pintle and couplers.

ENGINEERED BY

HOLLAND HITCH COMPANY

HOLLAND, MICHIGAN, U. S. A.



AUTO-LITE

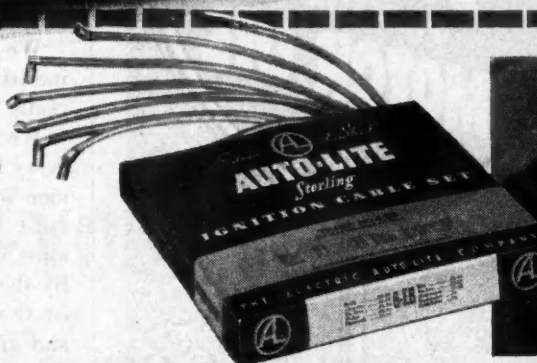
Wire AND Cable

THE COMPLETE LINE FOR EVERY AUTOMOTIVE USE

TUNE IN AUTO-LITE'S GREAT RADIO SHOW
"EVERYTHING FOR THE BOYS"
EVERY TUESDAY NIGHT—NBC NETWORK

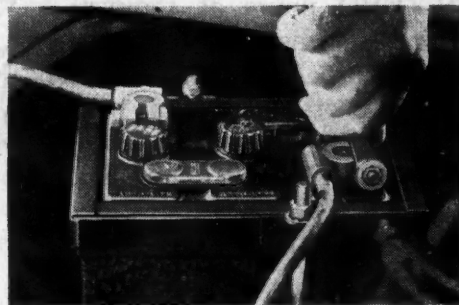
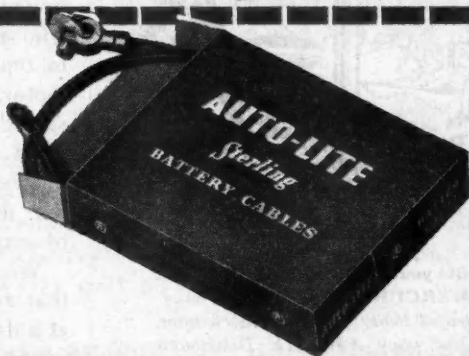
Spark Plug Wires

Auto-Lite's famous Steel-inductor high-tension spark plug wire is now available for bus and truck fleets. Supplied on spools or in sets cut-to-length with fittings attached.



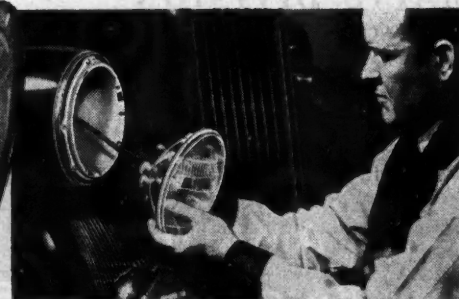
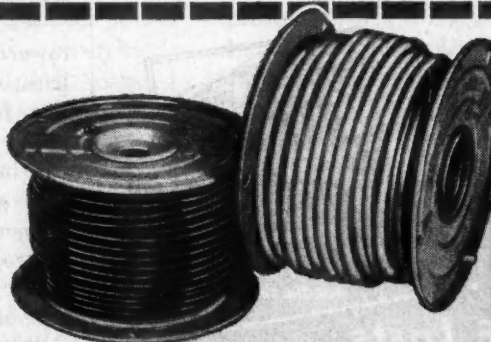
Battery Cables

You can service all makes of buses and trucks with an assortment of battery cable and ground straps. Sets come equipped with No-Corrode terminals and Auto-Lite's "Bumper Blocks" which clamp tight on any size post.



Spool Wire

Auto-Lite spool wire is made in all the types, sizes and insulations needed to meet the requirements of any automotive wiring job. Find out how Auto-Lite wire can help you lower maintenance costs.



THE ELECTRIC AUTO-LITE COMPANY • Merchandising Division • TOLEDO 1, OHIO

THE PROBLEM BEFORE EMPLOYERS, ETC.

(CONTINUED FROM PAGE 98)

and will serve the public welfare.

We must eliminate the chiseler from our industry. Individuals who own no trucks, operate no terminals, employ no traffic personnel, but who are simply brokers playing one company against another as they grab the lion's share of hauling revenue by their chiseling tactics — with de-

structive results to the whole motor freight industry—must go. They have no place in the scheme of things.

We must compel the establishment of fair rates, and, in harmony with the best interests of the public and of industry, we must enforce these rates. Not only must these rates provide a fair return on the investment of the operator; they must also be sufficient to pay good wages and maintain good conditions of employment for those who work in our industry. These employees, too, invest

their only capital in the industry; that capital is their labor.

Essential Activities

We must participate in the work of tested and well established agencies that have helped develop the business life of America. We must advertise in the newspapers in our various communities. We must be represented, as an industry, in the pages of our national periodicals. We must be in the forefront of those who support projects beneficial to our communities.

We must place our most competent leadership in community service, so that their ability and activities may reflect dignity and standing on our industry and hasten the realization of our industry's value to all communities.

We must use the radio to inform the public. We must support financially our own association work in a manner that will permit it to function in our best interests.

We must, in every phase of our industry, stop driving a horse and really operate a modern truck!

We must educate our drivers on every highway in the land to be salesmen for the trucking industry. They must be leaders in courtesy. They must observe every rule of the road. By their consideration for the motorist they can build public confidence and friendliness. Each driver must be encouraged to stop and aid those who are in trouble along the road—to repair a tire or help start a balky motor. The time and effort thus consumed will bring a tremendous reward in public good will to the industry, far in excess of the cost. It is our duty to observe fair standards of employment on our trucks.

We must establish division points that represent an honest day's work at a driving speed in concert with observance of the speed laws.

We should, as our contribution toward the solution of post-war problems, study carefully every opportunity for our industry to give additional service. Thus, we will aid in creating more employment. We should analyze carefully the possibilities of air commerce. We should foster it as a progressive development for the public good, and take every advantage of the opportunity it affords our industry to render a feeder and de-

(TURN TO PAGE 102, PLEASE)

Engineered to Keep Vital TRUCKS on the Job All Winter

Keep AMALIE SUB-ZERO in your truck crankcases whenever the thermometer reads below 45°. Then you can depend on easy starting and sure protection against sudden temperature drops . . . plus protection against temperature RISES, too! AMALIE SUB-ZERO pours at temperatures as low as 25° below, depending on S.A.E. grade. Yet it gives complete lubrication when the mercury climbs. Back AMALIE SUB-ZERO up with the right AMALIE Winter Grade Lubricants, from spring shackles to differential.

AMALIE DIVISION

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Now More Than Ever —

It's AMALIE First . . .

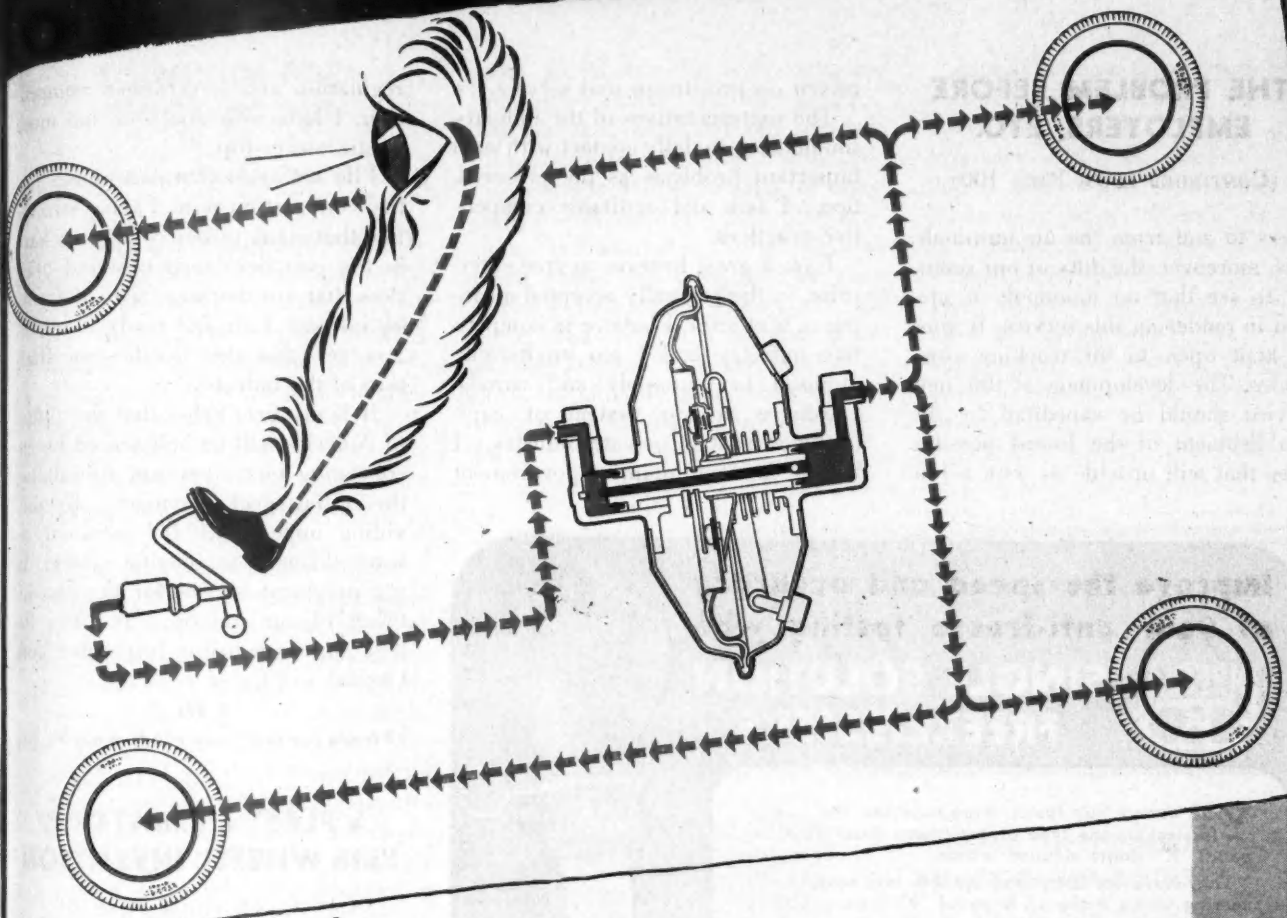
Because AMALIE Lasts

REFINERIES: PETROLIA, PA., AND FRANKLIN, PA. • PLANT: NUTLEY, N. J.



Get your free copy of "WHEN THE MERCURY DIVES" new illustrated folder on winter lubrication. Ask your AMALIE Distributor or write Dept. C3.





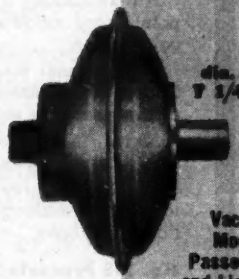
IMAGINE-YOUR BRAKES WITH *A Feather touch* STOP!

We mean you men whose job it is to manufacture trucks. You *owners, operators* and *Fleet Superintendents*. Yes — we mean *Distributors* of heavy-duty equipment and parts. YOU will be interested!

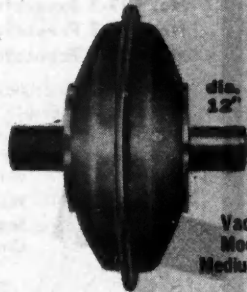
Suppose on your trucks you attained a Feather-Touch Stop. Suppose a 50 pound foot pressure was transmitted into 1,000 pounds of smooth, instantaneous braking power. Suppose you could compensate for "eye-to-pedal"

reaction lag and "leg fatigue" and impart to your brake system a feather-touch, quick, safe stop. Suppose this smooth split-second brake would reduce accidents, check costly repairs and pay-load delays.

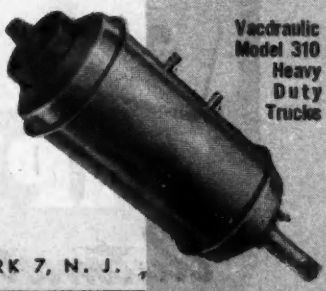
If you are in any phase of "transportation" — does it not seem reasonable that you would want the complete Vacdraulic story? Space here does not permit, but your inquiry will bring complete details.



dia.
7 1/4"
**Vacdraulic
Model 50**
Passenger Cars
and Light Trucks



dia.
12"
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Model 180**
Medium Trucks



**Vacdraulic
Model 310**
Heavy
Duty
Trucks

length 22"



VACDRAULIC

THE BRAKE POWER BOOSTER

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EMPIRE PRODUCTS INCLUDE:

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ELECTRIC BRAKES POWER BRAKING DEVICES

THE PROBLEM BEFORE EMPLOYERS, ETC.

(CONTINUED FROM PAGE 100)

livery to and from the air terminals. It is, moreover, the duty of our industry to see that no monopoly is created in rendering this service. It must be kept open to all trucking companies. The development of this new service should be expedited by the establishment of the lowest possible rates that will provide us with a fair

return on investment and service.

The representatives of the industry should keep in daily contact with such important problems as the preservation of fair and equitable competitive practices.

I am a great believer in free enterprise, in the generally accepted meaning of that term. I believe in competitive industry and I am unalterably opposed to monopoly and cartels. I believe in our system of capital investment in private industry. I believe in a minimum of government

regulation and government competition. I look with doubt on too much public ownership.

I do not agree that past abuses justify confiscation now. I recognize the fact that many power companies have, in the past developed unsound practices that are detrimental to the public interest. I am not ready to admit, however, that this justifies socialization of the industry.

It is my firm belief that the future of America will be best served by encouraging incentives and stimulating the initiative of its citizens, by providing opportunity for personal reward through our capital system. In my judgment, this is for the best interest of our country. It offers the best approach to the future for both Capital and Labor.

END

(Please resume your reading on P. 50)

A FLEET OPERATOR'S "5th WHEEL" INVENTION

(CONTINUED FROM PAGE 61)

trailer takes place between the apron on the trailer and top surface of the fifth wheel as in present practice.

Fig. B shows a tractor-trailer combination equipped with the invention being loaded while the wheels of the trailer were on sloping ground and one was appreciably lower than the other. The tractor was pulled around at right angles (90°). It will be noticed that the front of the trailer is parallel with the frame of the tractor and in a position that can be accepted without risk.

Fig. C shows the same load on the same combination and in the same position before the warehouse. The difference is in the change made to the fifth wheel coupling. The usual fifth wheel is no longer keyed to the bearing plate or apron of the trailer but is fastened instead in non-rotative relationship to the tractor frame, by connecting the turntable plates together. In other words, the coupling is just the same as in the conventional. The result is striking. The front end of the trailer, with no support but the rocking shaft with its axis now parallel to the axis of the trailer, has rotated around the shaft until it is in the undesirable, if not unsafe, position shown.

END

(Please resume your reading on P. 62)

Improve the speed and accuracy of your anti-freeze testing with



SINGLE SOLUTION FREEZETESTERS

YOU cannot buy faster, more accurate instruments for testing one type of anti-freeze than these Imperial "K" single solution testers.

They have the same high quality and sound engineering which make all Imperial "K" testers leaders in accuracy and ease of use.

The fine calibrations of the float and close graduations of the thermometer give precision results not ordinarily obtainable with commercial instruments.

All readings—float, thermometer and protection points—are made with the tester in its natural, vertical position.

Thermometer scale and correction chart are sealed in the jar and are easy to read at all times. Neither dirt nor radiator solution can reach them.

Liquid thermometer contacts radiator solution instantly, giving quick, reliable readings.

Has extra heavy annealed jar . . . Float is beaded to prevent sticking . . . Tip has non-roll, hex-shape base, 15" hose.

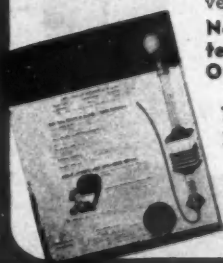
No. 548 Freezetester for "Prestone" Brand Ethylene Glycol.....	Net price to Fleet Owner \$1.65
No. 549-T Freezetester for "Zerex"	1.65
No. 551-T Freezetester for Alcohol.....	1.65
No. 552-T Freezetester for "Zerone"	1.65

If you are not standardized on anti-freezes, you will want the Imperial "K" Universal Freezetester. It will not only test over 100 anti-freezes, but it is the simplest, most practical, easiest-read universal tester on the market.

No. 546-T Universal Freezetester. Net price to Fleet Owner, only..... \$3.45

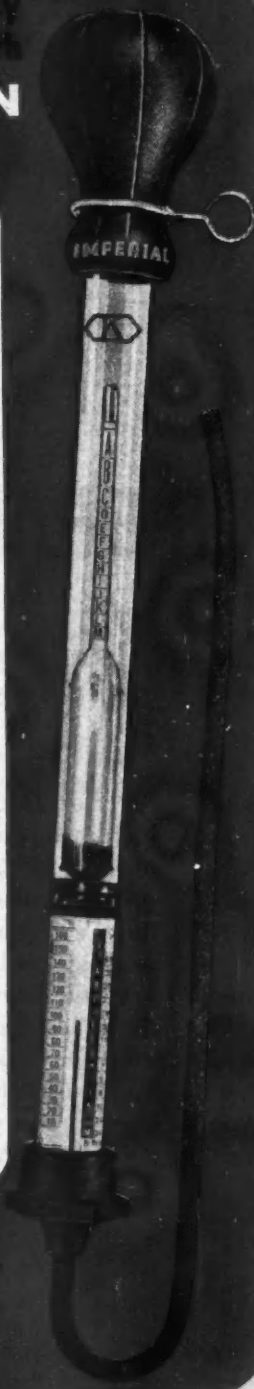
THE IMPERIAL BRASS MFG. CO.
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Bulletin No. 326 covers the complete line of Imperial Freezetesters.
Write for your copy



IMPERIAL

Automotive Products



ALUMINUM FOR TRUCK BODIES

(CONTINUED FROM PAGE 63)

cial bodies, the cost of fabrication is about the same for aluminum as for other metals, but the material cost is a little higher. The savings resulting from the use of aluminum, however, more than offset its higher first cost. Truck operators can well afford such an investment because of the high return it pays as a result of the better operating efficiency and greater payload.

While the economic advantages of aluminum alloys for truck construction have become well established, at times truck operators and body builders are likely to become confused by comparing the weights of trucks without taking into consideration the strength and gage of the material used in their construction. Some aluminum alloys are equal in tensile strength to structural steel, with only one-third the weight. By substituting aluminum alloys, section for section, for the heavier structural metals, the weight can be reduced 60 per cent. Such a substitution, however, will not result in quite as stiff a body as the one made of heavier materials, and slightly deeper or thicker sections will be acquired to obtain equal stiffness. This results in a weight-saving of about 50 per cent, and the strength of the body is actually increased.

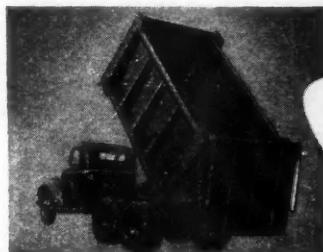
When comparing the weights of truck bodies made of different materials but which are of the same or similar design, the gages as well as the strength and stiffness of the material employed should be considered. While a weight-saving is possible with the heavier metals through changes in design and in the thickness of material, proportionally greater savings can always be obtained through the use of aluminum.

The cost of maintenance for aluminum bodies is lower than that required for bodies of other materials. It is unnecessary to repaint aluminum bodies often because the metal holds paint well and because rust cannot form underneath paint coatings. As a result, the appearance of aluminum bodies is not marred by rust streaks resulting from paint being scratched or chipped off. The main precaution for a successful

paint job is that the body must be thoroughly cleaned before painting. The use of a dilute aqueous solution of phosphoric acid mixed with certain organic grease solvents is especially recommended. Such preparations are marketed under several trade names and designated as particularly suitable for aluminum. All established paint manufacturers have suitable systems for prime and finish coats for aluminum, and their recommendations should be followed carefully.

Aluminum-base alloys are highly resistant to atmospheric exposures. Specimens (0.064 in. thick) of alloys such as 2S, 3S, 52S, 61S, Alclad 24S-T, and Alclad 3S exposed outdoors in a variety of locations show no measurable changes in tensile strength after periods as long as four years. Similar specimens exposed to sea water for periods of one year also show small to negligible changes in tensile strength. Thus, normal exposure conditions are well resisted by

(TURN TO PAGE 106, PLEASE)



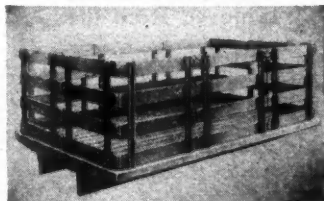
Six wheelers and heavy duty trucks.



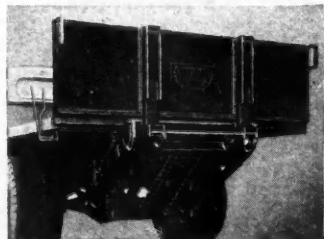
For short and long W. B. chassis.



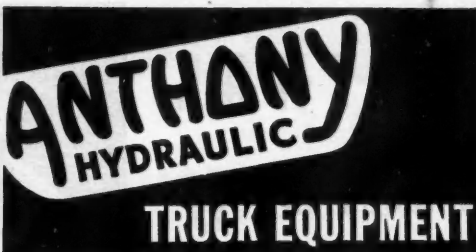
Special for wooden bodies.



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Solves manpower problem.



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sizes 5 to 30 ton capacity.

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make dump bodies out of flat-bed, stake, or grain bodies.

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Lengths up to 20 feet.

"LIFT GATE"
HYDRAULIC tailgate lift for loading truck van bodies, platform bodies, etc. One man does the work of three!

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ANTHONY CO.
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ALUMINUM FOR TRUCK BODIES

(CONTINUED FROM PAGE 105)

many of the aluminum-base alloys.

However, there are two conditions which may lead to corrosion in service. The first is galvanic action caused by joining dissimilar metals together without proper protection. The second is oxygen screening caused by the local screening of the metal surface by some wet solid.

These conditions will be discussed separately in more detail.

When two dissimilar metals are in electrical contact and exposed to a conducting liquid, generally an electrolytic cell is set up. Electric current flows from the more anodic metal through the solution to the other metal. This results in selective corrosion of the more anodic metal. In the case of the aluminum-base alloys, the most serious cause of galvanic corrosion commonly encountered is contact with copper-base materials such

as copper, brass, or bronze. Contact with nickel-base alloys and iron alloys will also result in galvanic corrosion of aluminum. Contact with cadmium or cadmium-plated objects results in little or no galvanic action, and contact with zinc, zinc-plated or galvanized objects is beneficial to the aluminum alloys, since zinc and the high zinc alloys are anodic to the aluminum-base alloys.

In general, it is good design to avoid joining dissimilar metals together. Where such combinations are unavoidable, suitable precautions should be taken. Where copper-base alloys must be joined to aluminum-base alloys, it is good practice to cadmium plate the copper alloys. Similarly, zinc plating or galvanizing of steel parts which contact aluminum alloys is desirable. Suitable paint systems on the faying surfaces and adjacent areas of dissimilar metal surfaces are also advantageous. The use of a coat of zinc chromate primer followed by one or more lead-free top coats has been found valuable. The joints themselves, especially if moisture is likely to be present, should be caulked with a suitable inhibited plastic, such as Alumilastic.

Oxygen screening action can result when wet insulation, wet wood, wet sound deadening felt, or wet floor dirt remain in continued contact with metal surfaces. As far as possible such contact should be avoided. If contacts of these types are necessary, the metal surfaces should be painted with zinc chromate primer and one or more top coats. Insulations such as hair felt can be inhibited by impregnation with a soluble chromate such as sodium chromate. The use of heavy, protective adhesives, such as mastic, rubber cement or bitumastic cements, is also helpful.

For both of these conditions, it is suggested that the advice of the aluminum manufacturer be sought, since the most appropriate methods of protection differ, depending on the exact conditions of service.

Aluminum bodies offer still another advantage to the operator, even after they have finally served their useful life. The scrap value, which a truck body will have when it is worn out, is often overlooked. Aluminum has a definite scrap value.

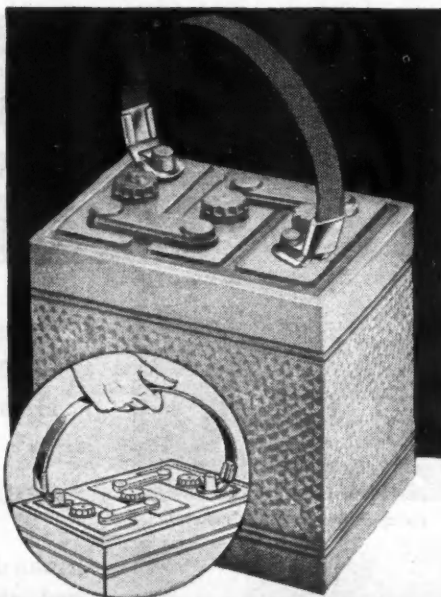
END

(Please resume your reading on P. 64)

CENTRAL Victory BATTERY CARRIER

Look!

NO MORE DROPPED BATTERIES



This popular, powerful battery carrier embodies a *new*, proved mechanical principle. Tension against the posts is constantly applied—even before the battery is lifted. Therefore, this carrier will not release a battery until it is actually removed from the posts by the mechanic himself.

NEW DESIGN PREVENTS SAGGING INTO ACID

The improved design keeps this heavy durable strap in a constant arc—it cannot sag into the acid and be destroyed like the ordinary carrier strap.

- Easily Attached
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- 32 oz. 3 ply Rubberized Duck Strap Won't Stretch
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- Easy on the Hands . . .
- Will Not Damage Battery Posts

2 SIZES

SHORT—For Regular Size Batteries

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FULL POWER For Worn Motors

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PISTON RINGS

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A Package of

FULL POWER



TODAY, as never before, worn motors must be given new life to conserve gas and oil — provide smooth, care-free performance.

The outstanding performance of the Moog X-Plus Piston Ring set-up, especially engineered to give FULL POWER results, is the answer.

A different type ring for each groove — each ring has its job and does it — delivers FULL POWER. Write for FULL POWER Story and new streamlined X-Plus catalog.

TOMORROW'S RINGS TODAY



Complete Spring Suspension Service

MOOG
ELECTRICALLY

HEAT TREATED TESTED SPRINGS
— WHERE SPRINGS ARE USED.

MOOG
COIL ACTION

REPLACEMENT PARTS — WHERE
FRONT END PARTS ARE USED.

Copyright 1944 Moog Industries Inc.

1919 . . . 1944
25 YEARS
OF PROGRESS

MOOG INDUSTRIES, Inc.

◇ ST. LOUIS SPRING CO.

◇ MOOG PISTON RING CO.

◇ MOOG COIL ACTION PARTS COMPANY ◇

General Offices: 6650 EASTON AVE., ST. LOUIS 14, MO.

Warehouses in principal cities

P. M. POINTS FROM A MEAT FLEET

(CONTINUED FROM PAGE 55)

GARAGE WORK SHEET			
BRANCH	TRUCK NO.	MILEAGE	DATE
<small>NOTICE THIS FORM MUST BE MADE OUT ON EVERY TRUCK EXCEPT WASHING AND POLISHING</small>			
WORK DONE	TIME	QUANTITY	PART NO. AND DESCRIPTION
<small>IMPORTANT-ACCIDENT DAMAGE</small> <small>YOU MUST REPORT HERE ANY DAMAGE DONE TO-DAY</small> <small>DRIVER</small>			
<small>USE REVERSE SIDE FOR ADDITIONAL REMARKS</small> <small>MILWAUKEE PTD. CO. 100 4-43</small>			
<small>ORIGINAL</small> <small>MAIN OFFICE</small> <small>COPY</small>		<small>DUPLICATE</small> <small>MAIN OFFICE</small> <small>TO BE PRICED AND</small> <small>FORWARDED TO FLEET</small> <small>SUPERVISOR</small>	
<small>USE REVERSE SIDE FOR ADDITIONAL REMARKS</small> <small>MILWAUKEE PTD. CO. 100 4-43</small>		<small>TRIPLICATE</small> <small>GARAGE COPY</small> <small>MILWAUKEE PTD. CO. 100 4-43</small>	

PETER ECKRICH & SONS, INC.			
DAILY TRUCK REPORT			
BRANCH	DRIVER		
DAY & DATE	TRUCK NO.		
IN READING	IN READING	ANTI-FREEZE	QTY.
MILES TODAY	OIL USED	RTS. USED	QTY.
REPAIRS NEEDED:	REPAIRS MADE		
By	MECHANIC		
LIGHTS	<input type="checkbox"/>		
MOTOR	<input type="checkbox"/>		
TIRES	<input type="checkbox"/>		
BRAKES	<input type="checkbox"/>		
HORN	<input type="checkbox"/>		
WIPER	<input type="checkbox"/>		
RADIATOR	<input type="checkbox"/>		
STARTER	<input type="checkbox"/>		
CLUTCH	<input type="checkbox"/>		
GEN'RTR	<input type="checkbox"/>		
ACCIDENT	<input type="checkbox"/>		
REMARKS			
<small>Send Original to Director of Safety & Personnel and Duplicate to Office.</small> <small>MILWAUKEE PTD. CO. 100 4-43</small>			

Engine overhauls at Eckrich are governed by findings obtained from above 4x7-in. daily truck reports

Left. Work sheets, 5½x8½-in., are made up in triplicate to aid cost control

have played a big part in helping us do this job and solve the wartime problems.

First, we have used one brand of truck exclusively in the 1-ton and 1½-ton units. Our purchases were divided between three dealers.

Second, we confined, and still do, at least 95 per cent of our replacement parts purchases to one dealer, because he kept, and still keeps, a good stock of genuine factory replacement parts on hand for our needs. Thus, the wartime advantage is that we have obtained prompt delivery on most parts needed, not to exceed a week at any time.

Our 1-ton and 1½-ton trucks, of which we have 94, are operated by driver-salesmen calling on food markets in the areas served out of the various branches. These units have refrigerator bodies—charged nightly at the central garages or branch plant garages, all of which have ammonia coils. Temperatures are held between 34 and 48 deg., and provide safe cooling for 16 hours. These trucks average about 36,000 miles per year each, on country routes.

We have two central garages, one in Fort Wayne, Ind., the other in

Kalamazoo, Mich., where complete garage equipment and tools are carried for all major rebuilding and overhauling, including painting. Two full-time mechanics and two utility men are employed in the Fort Wayne shop, two mechanics and one utility man in Kalamazoo.

Branch garages are equipped only with power grease guns, air compressors, battery chargers, hydrometers, and other small tools. One mechanic is stationed at each branch garage. His duties are to lubricate trucks, check tires, and do only minor, emergency repairs. Each branch garage carries one parts bin, with fast moving parts, and a few spare tires.

Recap Cut Tire Costs 50%

Recapping cut our tire costs in half for four years before the war began. But, first, our tire maintenance schedule enabled us to get 35,000 to 40,000 miles on original treads of pre-war tires. During the same period, pre-war recaps averaged practically the same mileage as from original treads. We saved 75 per cent of original casings for recap No. 1. Then 50 per cent of these

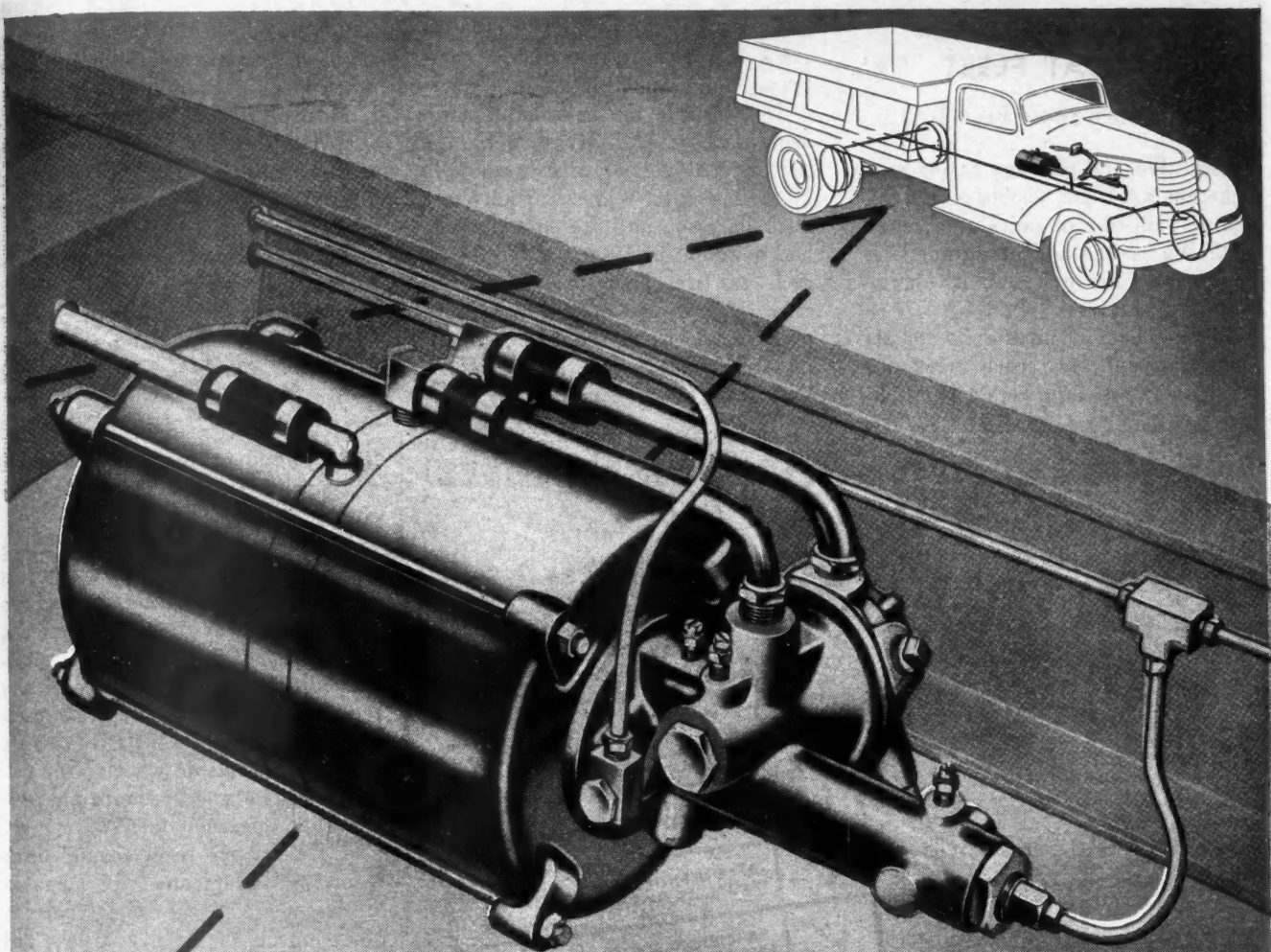
recapped casings were saved for recap No. 2, which in turn averaged mileage equal to recap No. 1.

We have had third recaps applied with fair success on city routes. But our experience shows that after wearing out the original tread and two recaps, the casing has deteriorated from various factors.

As to wartime recaps, the first war-quality camelback did not wear very well. It averaged less than half the pre-war quality, or around 15,000 miles. However, we think that the new synthetic camelback is going to give practically the same mileage as pre-war camelback, if it keeps on wearing as it does now.

New tires, wartime quality, as far as we can judge at this time, are going to give fair mileage, but they have not been in use long enough on our units to be sure. The units in our fleet use 12 different sizes, ranging from 6.00x20 to 8.25x20 and 34x7. Mileage records do not vary much on the different units, as weights now are properly proportioned, proper sizes used, and the following methods rigidly applied.

1. We strive to maintain good car-
(TURN TO PAGE 112, PLEASE)



Safer, Simpler, Thoroughly Proved—and Available Now

It's brand new to civilian use—the very latest thing in power braking. But it's also the best tested, *most thoroughly-proved new product* ever offered the automotive field. For Hydrovac braking won its spurs on the world's toughest proving ground—the mountain roads, swollen rivers, dust and sand of war. *Millions of miles* of grueling punishment!

The remarkable performance record of Hydrovac braking under severe conditions is largely due to its amazing simplicity. It is one small, compact unit. There are no external moving parts to get worn or damaged—they're protectively sealed *inside*—away from dust, dirt, and water. Installation is easy—mount it anywhere on the chassis, wherever convenient. There are only three connections. These are by tubing—there are no mechanical levers or

links. And the Hydrovac braking unit is simple to maintain—no adjustments required at installation or later in service.

Drivers like Hydrovac braking because it delivers braking power at pedal touch. Lets the foot "feel" proper braking pressure. Lessens driving fatigue—increases safety. And it has the powerhouse grip to hold big loads on steep hills.

If you own or service hauling equipment, it'll pay you to look into this further. Call your Bendix dealer today—or write to Bendix Products Division, South Bend 20, Indiana, for your copy of the new Hydrovac booklet. Your war-vital carriers deserve the *extra safety, extra efficiency of Hydrovac power braking.*

HYDROVAC and "BENDIX" ARE TRADEMARKS OF BENDIX AVIATION CORPORATION

BENDIX PRODUCTS DIVISION OF BENDIX AVIATION CORPORATION

SOUTH BEND 20, INDIANA

PM POINTS FROM A MEAT FLEET

(CONTINUED FROM PAGE 108)

casses. We find that any casing with inherent weakness, visible or hidden, will not afford economical service.

2. We use the best first-grade tires obtainable—the first step in obtaining good carcasses.

3. We check all tires daily for air pressure, and once each week for nails and tread injuries.

4. We never overload tires. We think this injures tires in the same proportion as underinflation.

To illustrate the overloading hazard: when we adopted recapping, the tires on our older trucks were 7.50x18, balloons, on rears. Capacity was 2025 lb. each, and the empty trucks had a weight of 1600 to 1700 lb. on each rear tire. Therefore, when much of a load was put on, the tires were overloaded. Then the only way to stop injuring them was to inflate above the recommended pressure,

which was 55 lb. for that size tire, to 65 lb. in summer and 60 lb. in winter when loads were lighter.

Most of that undersizing was eliminated when the later trucks came out with dual balloons 6.50x20 and 7.00x20 on rears, as it raised the carrying capacity to 3400 to 3900 lb. per rear wheel—automatically eliminating overloading. Tread wear increased, and we raised the percentage of casings for first and second recaps to 75 per cent and 50 per cent respectively.

5. We have tread injuries vulcanized promptly to stop moisture from getting into the carcass to rot the cords.

6. We mate duals by mounting new ones together. We do not mount a smooth tire and a new one as this throws excess strains on the new tire, causing faster wear and invites carcass injury. When new tires or new recaps are not available for exact mating, we keep the better of the two tires on the outside wheel. Our outside duals carry 5 lb. more air pressure than the inside ones.

7. We switch tires around from fronts to trailers and vice versa on the larger units. We switch spares to other wheels on smaller trucks and criss-cross them every few thousand miles to obtain even wear on all tires.

8. We turn casings in for recaps when ribbed or non-skid design disappears from about two-thirds the distance across the driving surface of the tread. We do not use a tire until the breaker strip shows through, as a carcass with a thin tread is more susceptible to road injuries and picks up more nails. Loose sidewalls also are more apt to develop to ruin the chance of recapping the carcass.

9. We do not use vulcanized tires on country runs as prolonged runs tend to overheat the repaired casing, causing road failures. We brand these tires with the words: "City Only."

10. We select a tire rebuilder for skill, honesty and one who possesses approved recapping and inspection equipment.

We tried various shops with more or less unsatisfactory results until we found one who turns in a high record of mileage, based on quality camel-back, a thoroughly efficient inspection set-up, with precision inspection units for locating hidden weaknesses.

(TURN TO PAGE 114, PLEASE)

FOR HIGHER **S.Q.*** BEHIND THE WHEEL

BE SURE OF THESE ESSENTIAL
QUALITIES IN YOUR BRAKE LINING



✓	EXCLUSIVE ASBESTOS-FRICTION COMPOUND MOLDED ON WIRE-GRID BACK
✓	CONSTANT HIGH CO-EFFICIENT OF FRICTION THROUGHOUT LONGER LIFE
✓	ASTONISHING FREEDOM FROM ADJUSTMENT
✓	PRECISION MACHINED FOR QUICK, CORRECT INSTALLATION
✓	QUICK STOPS... BUT SMOOTH... AND WITH SOFTER PEDAL
✓	MOST EFFICIENT BRAKING PERFORMANCE UNDER ALL CONDITIONS OF SERVICE

Engineers cannot engineer the man behind the wheel, and therein lies a challenge! A wide extra margin of safety must be engineered into every part. Grizzly engineers accepted this challenge—met it successfully—long ago. The result is Grizzly Brake Lining—finest product of the brake lining industry. Reline with GRIZZLY to obtain every quality essential to higher ***Safety Quotient** for your drivers and your equipment. Write today for the name of your nearest Grizzly Distributor. Grizzly Manufacturing Company, Paulding, Ohio. Plants in Paulding and Los Angeles.

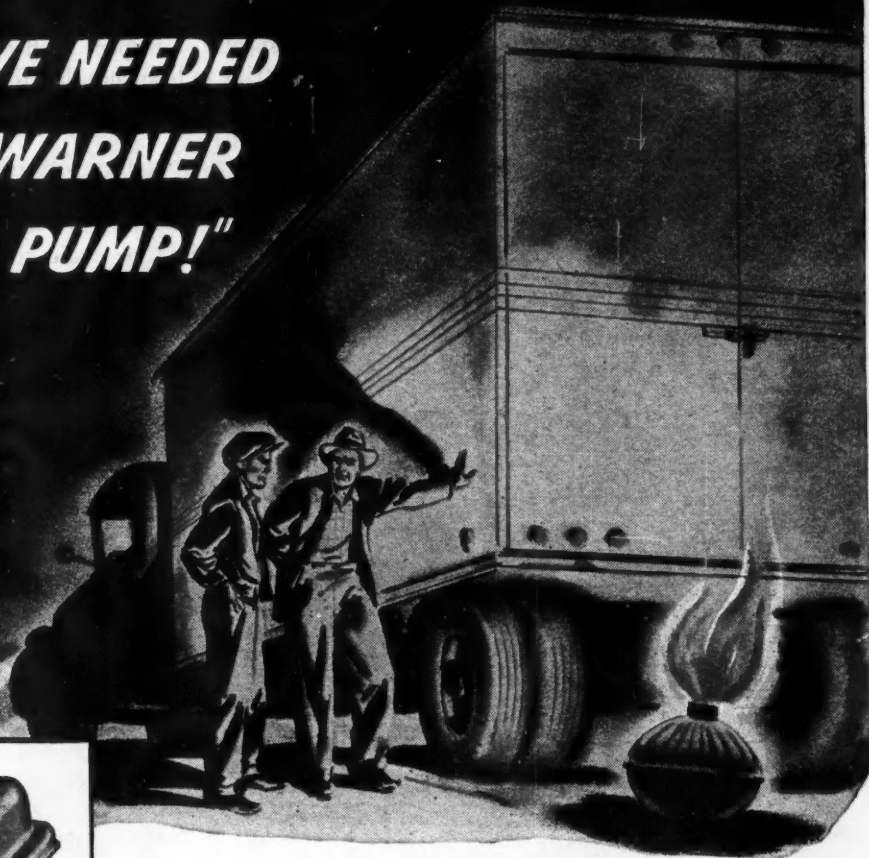
"Bear in Mind"

GRIZZLY

REG. U. S. PAT. OFF.

BRAKE LINING

"I TOLD YOU WE NEEDED A STEWART-WARNER ELECTRIC FUEL PUMP!"



Traffic-Tested. Ends Vapor-Lock and Fuel Pump Failure. DELIVERS 15 GALLONS PER HOUR . . . Available Now!

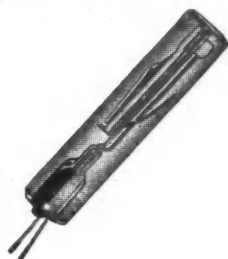
THESE are days when schedules have to be met—or else! So, you can't risk delays due to vapor-lock and fuel pump failure if you want to do your part.

The Stewart-Warner Electric Fuel Pump is easily mounted at the tank. It pushes fuel to the carburetor under pressure, eliminating air bubbles and vapor-lock. No rotating parts, no piston, no bearings to fail. Requires no attention. Lasts longer because it doesn't "beat itself to death." Delivers 15 gallons an hour on less than one ampere of current.

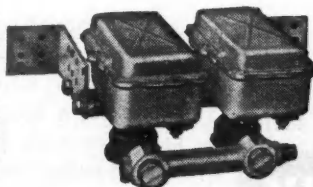
The special diaphragm of synthetic rubber and fabric *simply won't fail*. Tungsten contact points, sealed in a hydrogen-filled tube, can't pit, stick or burn. There's no fire hazard—the pump is approved by Underwriters' Laboratories.

Use the Stewart-Warner Electric Pump as a replacement or as an auxiliary "safety" pump for heavy-duty operation. Get the complete facts. Write today for free information. Stewart-Warner Corporation, 1876 Diversey Parkway, Chicago 14, Illinois.

EXCLUSIVE! Contact Points Sealed in Hydrogen-Filled Tube. Only the Stewart-Warner Electric Fuel Pump has this safety feature that eliminates fire hazard. Sealed in a hydrogen-filled tube, the contact points won't burn, won't stick or pit. The hydrogen keeps them clean. Operated and controlled magnetically. Approved by Underwriters' Laboratories.



Use Stewart-Warner Dual Electric Fuel Pumps where gas consumption is high—gas mileage lower than average. Dual pumps more than double the life of each pump. Can be installed so that each pump operates independently.



NO SERVICE PROBLEMS! In case of need, complete factory-rebuilt units are available locally—so vehicles are not kept idle awaiting repairs.

STEWART-WARNER ELECTRIC FUEL PUMP

STEWART-WARNER CORPORATION

* * * * *



PM POINTS FROM A MEAT FLEET

(CONTINUED FROM PAGE 112)

and who has the will to turn down all casings found unfit for recapping.

11. We use ribbed tread design for fronts and trailers, non-skid grip recaps on rear driving wheels.

12. Whenever possible, we put new tires on country routes, and older tires on city trucks.

13. Keep valve caps on all tires.

14. No tires may be sent out for recapping without the okay from the superintendent of auto maintenance. As OPA inspector, I inspect all fleet tires on my trips to branches, but the recapper has the final decision as to carcass suitability.

Our seven-year experience with recaps shows that they cut our tire costs in half. Therefore, we try, in every way humanly possible, to avoid the abuses which cause failures and excessive tire wear.

In any efficient fleet maintenance

program, we figure that good men are the mainstay. We select mechanics and helpers first for honesty and dependability. They provide their own basic hand tools. Special tools are supplied and paid for by the company.

Second, they must know their business in all phases of our maintenance program. No mechanics in our employ have been with us less than five years. Some have been with us regularly for 10 years. The incentive to keep reliable workmen with us in normal times is advancement. Whenever an opening comes that we can advance a capable man, we promote him to the better position. Due to this policy, our men figure that, over the long term, this is a good place to work, and they can depend upon permanent jobs after the war.

Engines Tuned Monthly

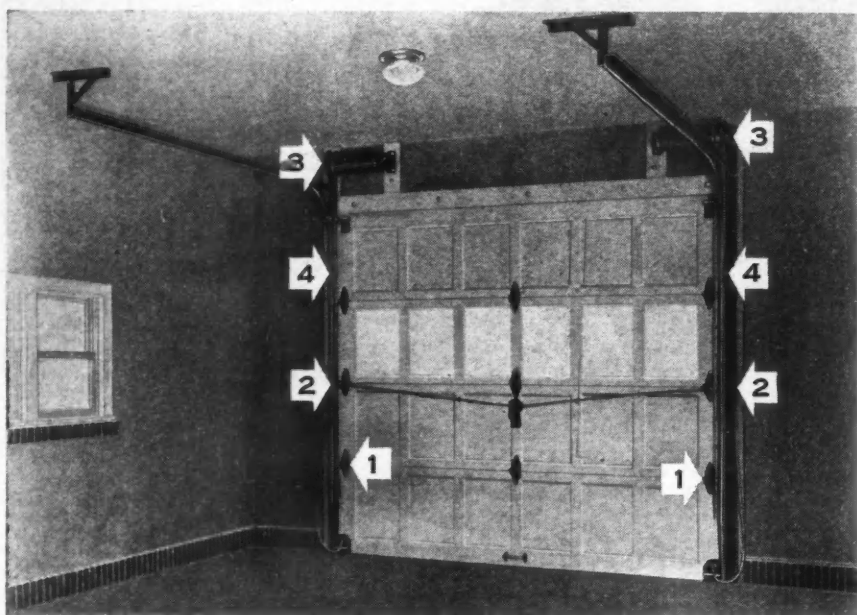
Engines are tuned up once a month to keep them in as near perfect condition as possible. The tune-up consists of spark plug cleaning and adjustment, plus a complete ignition and carburetor check-up. The exhaust analyzer tells whether or not the carburetor is ready for an overhaul. In these tune-ups, it is the little things that count, we find. For example, among other things we inspect the automatic spark advance control arm on the distributor. If worn, we replace it, because it will otherwise run on a retarded spark, cause overheating, loss of power, and use more gasoline, etc.

We have no definite time to overhaul our engines. An overhaul job is done when the daily check-ups show that it is necessary, because of loss of power, or when gasoline and oil consumption is excessive. The most frequent major job is grinding valves. But nothing is spared. If rings are necessary, they are put in. In every overhauling job, all parts are thoroughly cleaned and inspected.

Bulletins Improve Maintenance

To eliminate guesswork and to improve maintenance of trucks operating from here and our various branches, a loose-leaf binder is provided for each driver and mechanic. This binder contains 64 bulletins which give detailed directions covering every phase of our maintenance program.

(TURN TO PAGE 116, PLEASE)



Only the **Barcol**
OVERdoor
has All of these features:

1. Weathertight, rattleproof closing without sticking or binding. Roller-crank action.
2. Self-latching. Spring bolts engage automatically when closing.
3. Tailored "Twin Torsion" balance springs. Safe and quiet. Neat appearance.
4. Continuous vertical track brackets on all doors. Rigid. Conceal and protect cable.



FACTORY-TRAINED SALES and SERVICE REPRESENTATIVES IN PRINCIPAL CITIES

BARBER-COLMAN COMPANY

118 MILL ST.

ROCKFORD, ILL.

Studebaker salutes the members of the *Dairy industry*

With fewer motor trucks,
they're transporting
a new peak production of
121,237,000,000 pounds
of milk and milk products
this year



ALL milk produced on the nation's farms during the 1944 "Spring flush" was transported to market despite the fact that there were fewer motor trucks available.

Colonel J. Monroe Johnson, Director, Office of Defense Transportation, has commented appreciatively on the co-operation his office has received from the dairy farmers, haulers, dealers and processors of milk and milk products.

To insure conservation of transportation throughout the dairy industry, the 616 dairy advisory committees, functioning as of June 16 this year, put programs into effect that delivered all the milk produced—result in annual savings of over 55,552,000 truck miles, more than 305,540,000 tire miles, about 5,550,000 gallons of gasoline and well over 3,703,000 man hours.

The Studebaker organization,

active itself in promoting transportation conservation during the war emergency, extends its congratulations to the dairy industry for a great job well done.

Studebaker and its dealers have had many opportunities to aid dairy industry members in conserving their trucks and tires. Two important Studebaker contributions are the comprehensive handbooks entitled "Care and Maintenance of the Farm Truck in Wartime" and "Wartime Information for the Delivery Truck Operator."

Sample copies of these handbooks are available free from any Studebaker car or truck dealer or by addressing The Studebaker Corporation, Truck Division, South Bend 27, Indiana.



MAIL THIS COUPON

STUDEBAKER

*Pioneer and pacemaker
in Automotive Progress*

NOW BUILDING WRIGHT CYCLONE ENGINES
FOR THE BOEING FLYING Fortress—MULTIPLE-DRIVE
MILITARY TRUCKS—THE ARMY'S NEW M-29 "WEASEL."

Studebaker Truck Division, Dept. CC-8, South Bend 27, Indiana

Send free material checked:

- ☐ "Wartime Information for the Delivery Truck Operator"
☐ "Care and Maintenance of the Farm Truck in Wartime"

My Name

Firm (if any)

Address

City..... State.....

PM POINTS FROM A MEAT FLEET

(CONTINUED FROM PAGE 114)

The data are divided into 15 departments, or subjects. The specific departments are indexed for quick page reference. The subjects relate to safety, personal regulations, service, lubrication, washing and polishing, truck bodies and refrigeration, tires and wheels, accessories and daily reports. Sample bulletins and

a binder are reproduced on the first pages of this article.

The binders are kept up to date by issuance of new bulletins covering changes in methods or policies. Old bulletins must be removed and destroyed.

These bulletins are an important part of the personnel training program. It is hard to calculate the benefits and advantages to drivers and mechanics, especially in branch plants. The company benefits from them in a lowered maintenance cost,

especially on-the-road repairs due to accidents.

For example, in case of any damage to a truck, a written notice to the superintendent of maintenance is required to be sent in the same day, giving truck number, name of driver and details of damage. If the damage amounts to more than \$10, the superintendent's approval must be obtained before proceeding with repairs. All repair work done outside must be carefully checked to see that it is satisfactory before placing the unit back in service.

Duplicate copies of invoices must be turned in with the work sheets and, if due to an accident, the driver must ear-mark the report "Accident Repair." On extensive repairs, the final work sheet must be marked "Final Accident Repair." In this way, the office will know that the accident repair is completed, and can act accordingly on its records.

Excerpts of the major PM services covered by these bulletins and related comments follow.

From the motor lubrication bulletin:

For new trucks, use No. 10 motor oil for first 3000 miles. Change at 500, 1000, 2000 and 3000 miles. Install filters at the 3000-mile period and use No. 20 oil until truck reaches 25,000 miles. Thereafter, oil in crankcase is to be governed by seasonal changes. Use break-in oil in crankcase with the first three oil changes in all new motors.

Overhauled engines—use No. 10 oil. Change at 500 miles and again at 1000 miles. After 1000 miles, use grade of oil recommended in seasonal directions. Use break-in oil in crankcase for the first 2000 miles in overhauled engines.

On all other trucks, use No. 20 oil during all months except June, July and August, when No. 30 should be used. Exceptions of 10 days permitted during these dates under extreme weather conditions. On all trucks except new and overhauled ones, the oil will be changed every 2000 miles or at intervals not exceeding 30 days throughout the year. Never fill crankcase above "full" mark. It is better to have the oil a little below.

Differential Hypoid Lubrication—Use only SAE 140 truck duty hypoid lubricant in this type of differential. This number is suitable for all-year use. Different brands must not be mixed. If you must add lubricant between changes, add the same brand. Change differential lubricant each 10,000 miles. Flush with light oil. Do not use water, steam, kerosene, gasoline, alcohol or solvent to flush out housing. Keep lubricant level to the filler plug. Do not use hypoid lubricants in transmissions or universal joints.

(TURN TO PAGE 118, PLEASE)



Teleoptic Signals Give the Utmost in Signal Protection

Shippers appreciate knowing that their merchandise is protected by Teleoptic Directional Signals. They want safe — on-schedule delivery — not damage claims.

The patented "angular" construction of Teleoptic Signals insures visibility from all angles for over 125 feet — Day or Night. Extra heavy ground glass lenses. Rustproof—Dustproof—Shakeproof. Finger tip switch control. Scientifically correct, Teleoptic Signals are approved by ALL STATES requiring directional lights.

A limited number of sets available without priorities for trucks not previously equipped.

3 Types of Switch Controls



The TELEOPTIC Company
712 Marquette St. Racine, Wisconsin



WHY this New Heavy-Duty MOTOR OIL

*keeps engines
running...*



**CLEANER
SMOOTHER
LONGER!**

- ① **SOLVENT PROCESSED** ... to provide greater "oiliness" and comparative freedom from compounds that might break down and form sludge, varnish, gum.
- ② **DETERGENT** ... prevents initial deposits of sludge-forming products, as soot, carbon, fuel residues, road dirt in *new or clean engines*, exerts dissolving action on old deposits in *used engines*.
- ③ **Highly DISPERSIVE** ... disintegrates foreign matter and holds the particles in harmless suspension until removed when oil is drained. This characteristic, plus detergency, keeps all engine parts clean... keeps rings and valves free... seals in power.
- ④ **RESISTANT TO OXIDATION** ... protects the bearings against destructive corrosion.
- ⑤ **HEAT AND FRICTION RESISTING** ... retains its lubricating qualities under extreme temperatures and pressures.
- ⑥ **SUPERIOR QUALITY** ... refined from carefully selected Mid-Continent paraffin base crudes.
- ⑦ **EASIER STARTING** ... flows freely in cold weather, and lowers oil consumption at all times.
- ⑧ **For SPECIFIC PURPOSE** ... a super, tested and proved heavy duty motor oil for truck, bus, and other engines operating under severe conditions.

**For Light Trucks, Commercial Cars
DIAMOND 760 MOTOR OIL**

★

**For All Diesel Engines
D-X DIESEL MOTOR OIL**

★

**See the
D-X PREVENTIVE MAINTENANCE PLAN**

A compact, complete and easy-to-use system of Truck Maintenance—ready for your use! Write or Phone Your Nearest D-X Office.

**MID-CONTINENT PETROLEUM
CORPORATION**

Chicago Omaha TULSA Terre Haute Waterloo

PM POINTS FROM A MEAT FLEET

(CONTINUED FROM PAGE 116)

Filters—To reduce wear due to dirty oil and to keep down oil cost, install filters on all trucks as outlined above. Change cartridges at 6000 miles, or at intervals not exceeding two months on our standard size filters. Remove drain plugs from bottom of filters each month to remove drain sediment. Check head and cover screw gaskets and replace if not in good condition. Also check oil lines and copper tubing for leaks every day. Screw top cover on filter with hands. Never use pliers.

Before using filters on all trucks some five years ago, we had to change rings at 40,000 miles (average). With filters, we gained 20,000 miles between ring changes, or a total of about 60,000 miles. Besides, the saving gained on oil consumption is about 50 per cent.

These things are prolonging the life of our trucks, as shown by the fact that the units which would have been traded in 1942 are still running. Besides, some of our 1941 trucks already have run 20 per cent beyond

our former trade-in mileage points. The significant factor is, that we now confidently expect to keep our fleet in good condition for the duration.

Here is an excerpt from a bulletin dealing with our daily and periodic vehicle inspection requirements:

Daily Checks

1. Check mileage daily.
2. Check oil; add if necessary.
3. Check headlights, tail lights and stop lights.
4. Check radiator.
5. Start motor, see that generator is charging and oil pressure shows at gage.
6. Check tires.
7. Clean windshield and door glass daily.
8. Clean out truck cab.
9. Check horn and rear view mirrors.
10. Check brakes.
11. Be sure to make out daily reports.

5000-Mile Check-Up

1. Tune motor.
2. Clean and adjust spark plugs.
3. Clean and adjust distributor points.
4. Adjust fan belt—not too tight.
5. Check timing—oil and distributor wick.
6. Check water pump, radiator hose and connections.
7. Clean fuel pump strainer.
8. Tighten cylinder head and manifold bolts.
9. Adjust valve tappets—(Is overhead getting oil?).
10. Adjust carburetor—(Use vacuum gage).
11. Clean and oil air cleaner.
12. Tighten body and cab hold-down bolts.
13. Tighten radiator and bumper bolts.
14. Check and tighten all motor support bolts.
15. Tighten front and rear spring U-bolts.
16. Inspect steering gear, drag links and steering arms.
17. Tighten generator bracket.
18. Check door locks and window regulators.
19. Adjust clutch pedal clearance.
20. Road test truck—(Check brakes and governor).

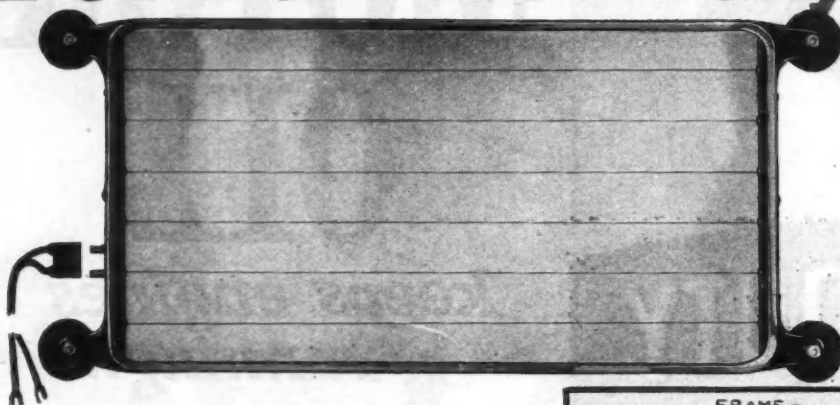
Remove carburetor air cleaner every 2500 miles. Wash in pan of gasoline, put new oil on it and replace. This cleaner catches the dust and keeps it from going into the engine thus preventing excessive wear.

10,000 Mile Service

1. Remove front wheels, clean and re-pack—(Check brake lining for wear).
2. Remove rear wheels, clean and re-pack—(1936 only).
3. Check fuel pump pressure.
4. Tighten all electrical connections.
5. Clean crankcase breather pipe.
6. Check generator brushes for wear.
7. Check emergency brake cables to see that they are not frozen.

(TURN TO PAGE 120, PLEASE)

For Fall Delivery



FULTON "44" Electric DEFROSTER

The Fulton "44" is an improved, war-time development of the famous Fulton Electric-Sleet-Frost-Shields, in use for years on hundreds of thousands of cars and trucks. It is the type of defroster selected by the U. S. Ordnance Department because of its unfailing reliability under all weather conditions.

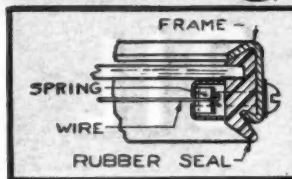
A steamed-up, frosted, or sleet- or snow-covered windshield is one of the greatest of all driving hazards. Hence, a dependable defroster is an absolute necessity for *safe winter driving* . . . and *safe driving* is the first essential to uninterrupted transportation in this most critical period of our history.

New features of the Fulton "44" Defroster include:

- (1) Improved seal between defroster glass and frame. After assembly the frame is forced against the glass to compensate for any irregularities in frame, rubber or glass, thus preventing "leakage" of moisture and resulting "misting", in space between defroster and windshield.
- (2) Concealed individual springs at each end of each heating wire reduce danger of wire being loosened or twisted out of position.
- (3) Six heating wires for most efficient distribution of heat.
- (4) Nuts holding frame to cups are permanently installed in frame.

In operation, NO ELECTRIC HEAT IS REQUIRED for keeping space under defroster free from frost on *inside* of windshield. Electric heat is used only to melt ice and snow on *outside* of windshield.

Fulton "44" Defrosters in both 6- and 12-Volt types will be available for the 1944-45 winter season, under the provisions of Order L-158, subject to our ability to secure necessary material and labor for production.



Sectional view showing details of rubber seal and individual concealed springs at each end of heating wire.

THE FULTON CO. 1912 South 82nd Street
Milwaukee 14, Wisconsin

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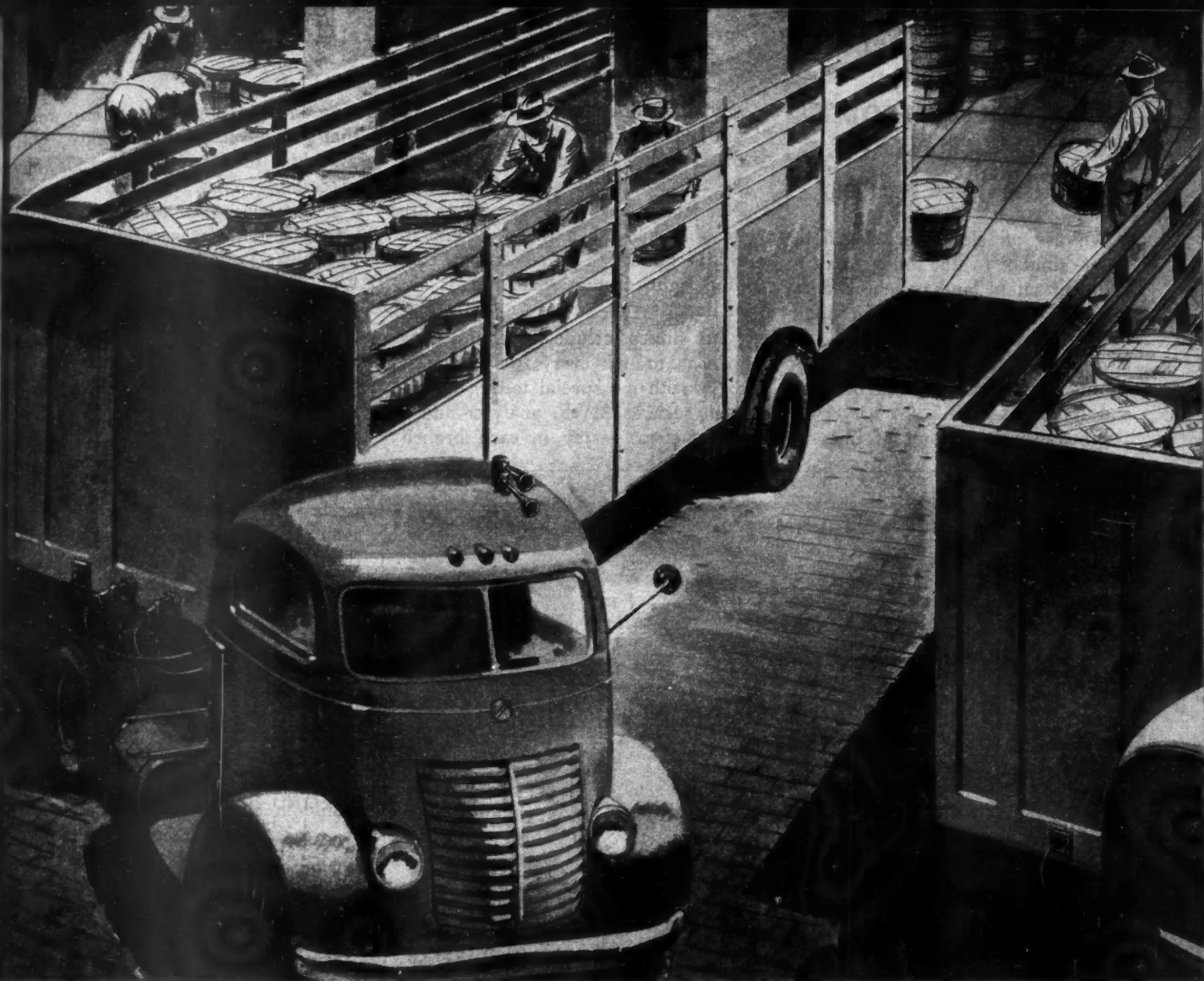
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VITAMINS MUST BE BROUGHT TO MARKET

The nation's food basket rolls on rubber. From coast to coast huge fleets of motor carriers are rushing produce to distant markets ★ So vital is this service that split-second schedules are imperative. Obviously, this calls for the finest in equipment which operators everywhere recognize includes the safety standard of the world . . . genuine Bendix-Westinghouse Air Brakes ★

Bendix-Westinghouse and its nation-wide chain of Authorized Distributors are, to a man, interested in explaining what the world's finest Brake and Pneumatic Controls can do to step up your service. Their counsel is entirely free and without obligation.

**BENDIX-WESTINGHOUSE AUTOMOTIVE
AIR BRAKE COMPANY . . . ELYRIA, OHIO**

Bendix-Westinghouse

**AIR BRAKES
AND PNEUMATIC CONTROL DEVICES**



IT IS SIGNIFICANT THAT AMERICA'S FINEST MOTOR TRUCK FLEETS ARE EQUIPPED WITH BENDIX-WESTINGHOUSE AIR BRAKES

PM POINTS FROM A MEAT FLEET

(CONTINUED FROM PAGE 118)

We use an electric-eye headlight tester similar to the ones used in Ohio on safety lanes to check automobiles. We check these thoroughly every fall for winter driving. We also have a portable wheel alignment equipment for accurate tests on front end alignment.

When wheels are out of line, we

send the work out to a specialist, as our garage is not large enough for the correctional equipment necessary for this work, but we expect to have that later on. Wheel alignments are made if and when the mechanic in charge notices that tires are not running right, or that something is out of line.

My duties include inspection trips to each branch every two weeks. I carry with me special testing equipment such as A.V.R. analyzer and a tachometer. I stay in each branch

long enough to check over any work that the mechanic might have, and give him the okay to proceed with necessary repairs.

Our management always held that attractive appearance of its trucks is a vital factor in fleet maintenance. We believe that well washed and polished trucks reflect the quality of our food products to dealers and consumers. In addition, cleanliness actually prolongs the life of the trucks, and drivers have a high regard for a clean, bright appearing truck.

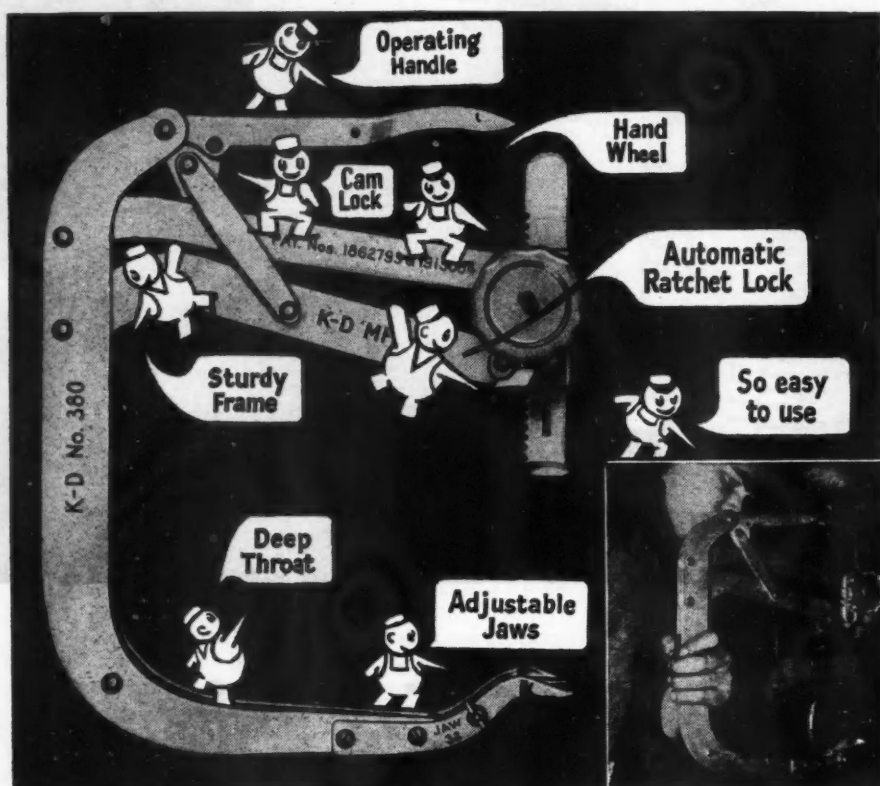
Before the war we washed our trucks daily. Now we do it once a week. The inside is washed with a soap compound every two weeks. Bodies are polished once a month. We find waxing pays as it preserves the finish. Paint jobs last four years on our refrigerator bodies. Keeping bodies clean and well painted extends their life to at least 10 years.

Overflow tanks are installed on all trucks for better engine operation and lower anti-freeze consumption. Radiator covers are adjusted by the mechanic in charge of local fleets. In no case are salesmen permitted to change them. Cracked engine heads, caused by excess heat boiling out the anti-freeze solution when driving with a closed radiator cover, is too expensive.

Water heaters are removed from all trucks by May 1 of each year. Switches are removed with heaters and tagged with the truck number. Each heater is then checked for leaks in the core or connecting pipes. Also, heater motor and fan are checked for worn or loose bearings. Mounting brackets are checked for wear from vibration. If the heater is in bad shape, it is placed in the stock room until it can be checked by the truck supervisor, on his next trip to the branch, who will either okay its repair or junk it. Heaters are put back on by October 1 of each year and new heater hose installed.

We see no difference between the mileage or length of service obtained now and with pre-war parts. If the quality is below pre-war grade, we have not suffered by it. We attribute this to reducing highway speed, and refraining from overloading. Just as an old horse cannot do hard work at top speed, neither can we expect our aging trucks to haul overloads at pre-war speeds and hold up for the

(TURN TO PAGE 124, PLEASE)



THE LITTLE GUY'S GOT SOMETHING THERE!

Fact, he's got everything—everything that makes the K-D 380 so versatile and easy to use. Turning the hand wheel on the first spring sets the depth of the plunger bar and the automatic ratchet engages. On all other springs the speedy operating handle is used, the overcenter cam lock holding spring compressed. Two sets of adjustable jaws. Sturdy steel frame, strong enough for any job within its capacity, old or new, L-head or valve-head. See the whole line at your jobber's or write for catalog to K-D Mfg. Co., Lancaster, Pa., and Hamilton, Ont.

K-D TOOLS
The Hustlers for Your Toolbox!

BRAKE ADVANCEMENT!

Synchronizes Tractor Hydraulic Brakes and Trailer Electric Brakes so Foot Pedal Operates them TOGETHER



Controller is easily and quickly fitted into the hydraulic brake line.

Only a few flexible wires. Nothing to freeze or chatter . . . No complicated mechanisms.

FOOT PEDAL PRESSURE
CONTROLS BRAKES ON
Both TRACTOR AND
TRAILER

WARNER

ELECTRIC BRAKES

PM POINTS FROM A MEAT FLEET

(CONTINUED FROM PAGE 120)

duration. Our experience and records show that either factor causes faster wear and more frequent road failures.

We considered speed control so important that we have had our trucks governor-equipped since June, 1938. However, we still set them between 42 and 45 m.p.h. to get over

the grades, but it is up to our drivers on all other highway spaces to maintain the 35-mile limit. As the governors cut down the r.p.m., the engines hold up better, last longer. We do not permit drivers to tamper with governors.

We figure that governors and the ODT speed limit regulations save us 10 per cent on our gasoline and crankcase oil consumption. From the start we adhered to these regulations. In fact, we went beyond their requirements. We used to deliver our

meat products every day to food markets. Now the regular schedule is twice a week, and without noticeable loss of customers or volume of sales.

END

(Please resume your reading on P. 56)

Errol J. Gay Cited by Army for His Service

Errol J. Gray, manager of the bus, truck and fleet division of Ethyl Corp., has been awarded the emblem for Meritorious Civilian Service by the Army for overseas achievement as a technical civilian adviser on petroleum problems.

Mr. Gray was cited by Lieut. Gen. Brehon Somervell, chief of the Army Services of Supply, "for contributing greatly to the standardization of fuels and lubricants and containers now employed by the armies of the United Nations during two overseas theatre missions."

"The first mission, to North Africa, and subsequent follow-up work," the citation continues, "resulted in much simplification of the supply of petroleum products and containers to Overseas Theatres of Operation."

"The second overseas mission to England resulted in harmony of action between the United States and Great Britain, and in simplification and standardization of the supply of petroleum products to both. During this tour he worked with nearly every engine manufacturer in the United Kingdom, which resulted in more efficient and economical use of fuels and lubricants."

Associated directly with the British Ministry of Fuel and Power, he helped to coordinate the manufacture and maintenance of vehicles for the armed forces.

**"HOW DO YOU LIKE WORKING
ON AN EMPTY STOMACH?"**



You can't get full working power out of a starving battery! It pays to insist that all batteries in service be checked regularly and kept fully charged. That prolongs battery life.

When a battery has finally lived its normal life, replace it promptly. And for real stay-

ing power, make the replacement an Edison.

After all, a storage battery is an electrical device—and the greatest name in electricity guarantees the performance of an Edison!

THOMAS A. EDISON, INC.
Emark Division
Plant No. 1, Kearny, N. J.

YOU CAN ALWAYS RELY

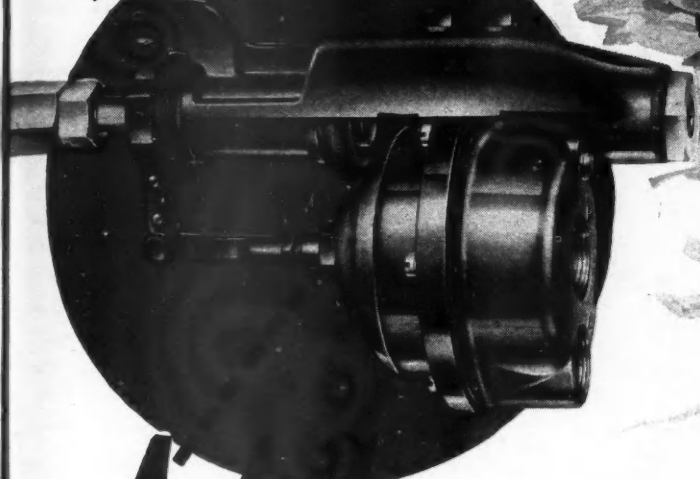
ON AN EDISON



Highlight of the presentation of the Army-Navy "E" Production Award to International Chain and Mfg. Co., York, Pa. Left to right: Col. A. D. Kelso; Lt. E. G. Carpenter; Howard D. Campbell, treasurer; Thomas W. Folger, representing the employees; George J. Campbell, Jr., president

When the
going is
RUGGED-

YOU CAN DEPEND ON!



AAC BESLER POWER BRAKES

...because these well known vacuum brakes, proven superior by many years of rugged service, give you

- ★ Instant Braking Action
- ★ Quick Release
- ★ Maximum Power Range
- ★ Positive Leak-Proof Construction
- ★ Automatic Self Compensation
- ★ A Minimum of Working Parts
- ★ Freedom from Servicing Problems
- ★ Resistance to Rust and Corrosion
- ★ Brake Power Regulator
- ★ Reactionary "Pedal Reflex"
- ★ Quick, Easy Installation

Where else can you find these multiple advantages? Only AAC-BESLER POWER BRAKES have them all! See your brake equipment dealer today, or write.



POWER CONTROLS DIVISION
BURBANK, CALIFORNIA

AIRCRAFT ACCESSORIES CORPORATION
ENGINEERED POWER CONTROLS • PRECISION RADIO and ELECTRONICS
Burbank, Calif. New York, N. Y. Kansas City, Kans.
Cable Address: AACPRO

EXPANDER RINGS GIVE ENGINES AN "E"

(CONTINUED FROM PAGE 39)

excessive pressure of the expander ring.

Modern design in expander-type piston rings provides flexibility and conformability through the correct combination of ring section radial thickness with expander pressures. These rings are able to compensate for worn cylinder conditions, with negligible hindrance to cranking

effort. Modern design of expander-type, oil-control ring combines moderate cylinder-wall radial pressures with ample drainage capacity through the ring to control oil consumption adequately. Ring and expander are designated as a unit to fit piston-ring grooves properly. Rings designated for a particular engine are assembled into a package containing all the rings required to service the engine correctly. Ring manufacturers include in the package specific instructions for the proper installation of

each ring on the piston for the particular engine.

Economic Advantages

The committee's investigation indicates that where cylinder wall wear is favorable and where other engine parts are in good condition, the following benefits are obtained from the use of expander-type rings in such worn engines.

1. About 80 per cent increase in cylinder-block life.

2. At least one set of pistons saved.

3. The expense of at least one re-bore job avoided.

4. Reduction of out-of-service loss.

In changing from a rebore and plain-ring practice to a new maintenance program employing expander-type rings for additional service mileage, the pistons are called upon to give longer service. Accordingly, it is necessary to beware of top groove wear and to check for it. Usually, with effective maintenance, the block will be worn to a point where reconditioning is necessary quite some time before the pistons lose their usefulness. The most important requirements for long piston-ring groove life are:

Installation Cautions

1. Clean air intake, free from grit. Effective air cleaners are required and they must be carefully maintained.

2. Freedom from severe fuel knock (detonation). Detonation, which is accompanied by excessive pressure and heat, results in rapid ring-groove wear, destruction of top cylinder wall lubrication, and eventual destruction of piston and rings in service. Engines must be kept in proper adjustment consistent with the octane value of the fuel being used.

2. Correct water - jacket temperature. Cooling systems must be kept clean. Clogged radiator tubes are a common source of engine overheating.

4. Clean lubricating oil. Oil filters are desirable. **END**

(Please resume your reading on P. 40)

National Battery Ups Tanner

George S. Tanner, plant engineer of National Battery Co's Dallas factory, has been appointed manager of equipment sales with headquarters at the company's general offices in Saint Paul.



With a MARQUETTE A.C. ARC WELDER

Literally or figuratively . . . that expression applies perfectly to Marquette Welders.

In its literal sense, the secret lies in the way Marquette employs the inherent advantages of a.c. current, making it possible to run flawless welds in deep angles and grooves. There is no "magnetic blow" to pull the arc out of line . . . only perfect arc control, resulting naturally in stronger, more uniform and better looking welds.

Figuratively . . . in the jargon of the "rug-cutter" . . . it refers to the way the sweet, smooth performance and flawless welds of a Marquette makes bumper to bumper automotive repairs without the cost or time required for hard-to-get replacement parts.

**LOW INITIAL COST — LOW COST OPERATION
FAST, FLAWLESS WELDS — NEGLIGIBLE UPKEEP**

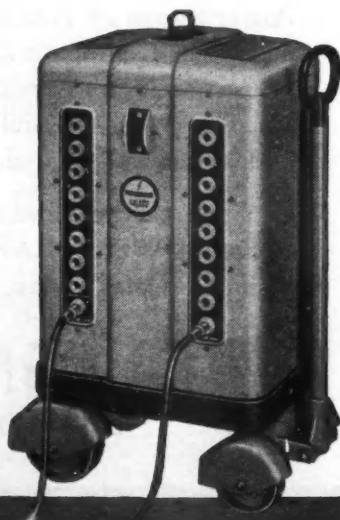
Send for free, 24 page, illustrated booklet.

MARQUETTE MFG. CO., INC.

Minneapolis 14, Minn.

MARQUETTE
REGISTERED U.S. PAT. OFFICE

a.c. arc welders



FOR TRUCKS, TRAILERS, AND BUSES

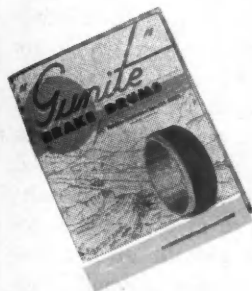


*Learn
more about...*

**BRAKE
DRUMS**

by **GUNITE**

Eliminate troubles... Reduce maintenance costs!



WRITE FOR THIS
NEW CATALOG

Don't blame the brake lining when the fault is in the drum! Replace with GUNITE Engineered Brake Drums. Eliminate your troubles, save your linings, and reduce brake maintenance costs by 50%. GUNITE Brake Drums do not flex on cam and anchor sides. Fade out and roll away, caused by expanding brake drums, are prevented. Linings will not glaze or

cook from excess heat with GUNITE heat-controlled, self-lubricated Brake Drums. GUNITE drums are supreme on any basis ... cost per mile, lining life, brake efficiency, interval between adjustments, or any other way you want to gauge them. Learn about GUNITE Brake Drums ... and use them! Brake stations — write for our new distributorship offer!

Over 900,000 Gunite Brake Drums have been made since 1928



GUNITE FOUNDRIES CORPORATION
ROCKFORD, ILLINOIS

Post-War Road Policy of Chamber of Commerce

A post-war highway program, founded upon state and local control, with the function of the Federal Government primarily one of coordination, was recommended in a statement of policy issued by the United States Chamber of Commerce.

This statement is the result of a referendum of the National Chamber's membership, just closed, and is an endorsement of recommendations

made by the Chamber's Transportation Committee.

Specific declarations of policy announced by the Chamber are:

Highway Programs: Specific highway programs should be based on comprehensive surveys giving adequate consideration to an over-all plan, to the economic benefits of each highway and to the proper relationship of the entire program to the whole public budget.

Responsibility for Highways: Each state within its jurisdiction should be

primarily responsible for the development of programs applicable to highways of general use and for the construction and maintenance of such highways.

Financing Highways: The costs of building and maintaining highways should be paid by the interests they serve in proportion to benefits. Highway users should pay the major part of the costs of highways of general use, including main thoroughfares in urban areas, in addition to paying their fair share of the general costs of government. Local roads and streets should be financed from general revenues or property assessments augmented by a share of user revenues proportional to use.

Contributions by Highway Users: Contributions by highway users to the cost of building and maintaining highway systems should be through special taxes or fees based on logical standards reasonably commensurate with the value of the use; and no part of the proceeds of these special user levies should be diverted from highway purposes.

Federal Function: The function of the Federal Government in highway development, except for direct responsibilities for highways on the public domain, should be primarily one of coordination in the interests of interstate commerce.

Highway Safety: Safety, not only through suitable highway construction, reconstruction and maintenance, but also through protective devices, adequate administration, law enforcement exclusively by state and local authorities, and education of highway users, should be a prime requirement in all highway programs.

Railroad Grade Crossings: There should be a continuous post-war program for the elimination of railroad-highway grade crossings which are dangerous or which delay a substantial volume of traffic, any assessments for construction costs levied against railroads, or obligations imposed upon them for subsequent maintenance or taxes, to give adequate recognition to the growth of highway use and to the relatively small benefits derived therefrom by the railroads under present conditions.

Federal Highway Agency: All Federal-aid for highways should be administered by a single agency, working exclusively with the state highway departments.

BUNDYFLEX

Original Equipment

RIGID HYDRAULIC BRAKE LINES

Original equipment on every car and truck made in the United States in recent years.



**BOTH ENDS
DOUBLE-LAP
FLARED, with fittings
attached, ready for
instant installation.**

Only
6 numbers to stock

Six numbers provide replacements for 90% of the rigid brake line jobs that come to the dealer's door.

Order from your jobber!

EVERHOT PRODUCTS CO.

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1406 SOUTH GRAND AVENUE, LOS ANGELES 15, CALIFORNIA

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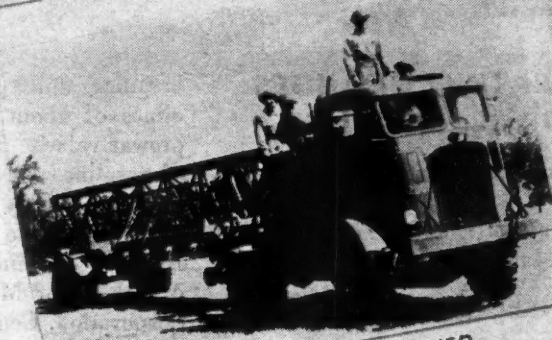
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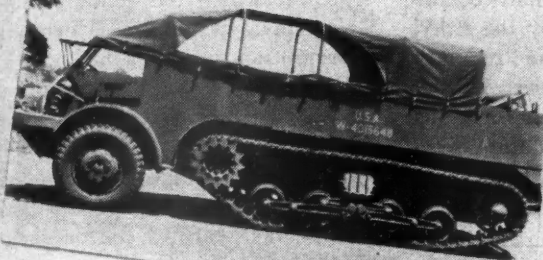
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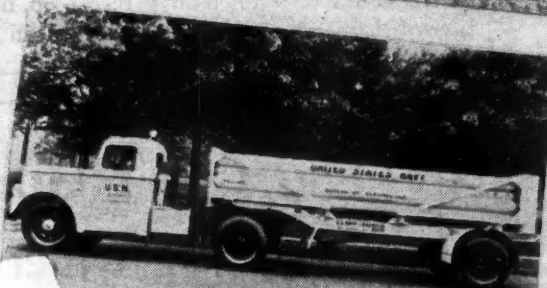
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PONTOON BRIDGE CARRIER



3/4 TRACK TRUCK



U.S. NAVY HELIUM-HAULER

Working with America's splendid ordnance engineers, Mack engineers have cracked these tough nuts, one by one.

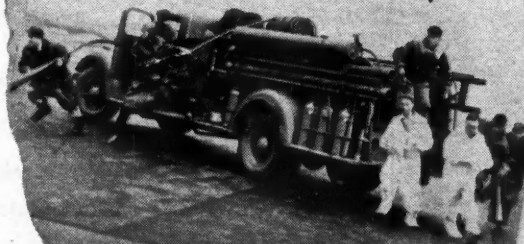
You Mack owners here at home have helped a lot. You've taken good care of your equipment, and you've kept it rolling in essential uses.

Mack TRUCKS

ONE TON TO FORTY-FIVE TONS; BUSES, FIRE APPARATUS AND MARINE ENGINES

Mack Trucks, Inc., Empire State Bldg., New York 1, N. Y.

AIRFIELD CRASH TRUCK



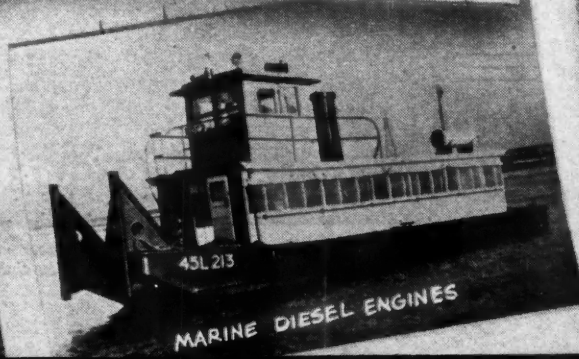
10 TON DIESEL CARGO CARRIER



U.S. NAVY PERSONNEL TRANSPORT BUS



PARTS
FOR REPUBLIC
"THUNDERBOLT"



MARINE DIESEL ENGINES

OPERATING CHANGES FOR BEARING LIFE

(CONTINUED FROM PAGE 52)

has been particularly helpful with babbitt bearings.

Detonation Problems

Due to the requirements of the military, the supply of tetra-ethyl lead has been severely restricted for civilian use. This has resulted in a reduction of the octane ratings of both

"regular" and "premium" grade gasolines of about four octanes below prewar values. The "premium grade of gasoline, where the octane rating is controlled by tetra-ethyl of lead, is being held to an octane value of 76 plus or minus one-half octane ASTM Motor Method, by the Ethyl Corporation. Generally the "regular" brands of gasoline have been held at an octane rating of 72 plus or minus one-half octane, ASTM Motor Method, but, except in P.A.W. District No. 1 in the eastern states, *there are no*

national restrictions on the octane values of "regular" grade of gasoline which may be supplied by a gasoline vendor. It is, therefore, very necessary that a truck operator learn from his vendor the octane rating of the gasoline which the vendor proposes to supply. When this is determined the ignition timing of the owner's engines should be readjusted if necessary to accommodate this fuel without excessive detonation. On engines which have a compression ratio below 5.5-1, adjustments in spark timing should take care of the degradation in octane rating. Engines above 5.5-1 compression ratio may require other adaptations to permit their satisfactory use on war fuels. Consultation with the engine manufacturer and the gasoline vendor will indicate what steps need to be taken in this regard.

In view of the fact that the octane rating of available gasoline is definitely reduced, it is obvious that prewar values for adjusting engines may result in excessive detonation under heavy loads. Severe detonation can be a contributing cause to engine bearing failures.

Carburetor adjustments have a great effect upon the detonation characteristics of an engine. Very lean carburetor mixtures may result in burnt valves as well as cause detonation. Lean carburetor mixtures may be caused by plugged jets in the carburetor or by insufficient fuel pump delivery pressure. The results of overrich mixtures are well known and can be caused either by excessive fuel pump pressures, by raising of the float level in the carburetor as a result of wear on needle valve and float parts, or by wear of jets.

Also due to the exigencies of war the distillation points of civilian gas have been raised. This may result in increased crankcase oil dilution difficulties. To reduce the effects of dilution in winter time or cold weather operation, alterations should be made on the vehicle to increase the crankcase temperature. Increased crankcase temperature in cold weather operation will help drive off water vapors which may cause oil sludge as well as drive off the heavy and fuel dilutions to assist in better crankcase conditions, it is also necessary that the air cleaner on the crankcase breather pipes or breather openings be kept clean and in free operating
(TURN TO PAGE 134, PLEASE)

You Can't Go Wrong! When You Order "MILEY" Better Brake Materials

FOR Miley Factories are pushing out a steady stream of Brake Materials to keep trucks rolling on the home front, too.

You get post-war quality now in Brake Linings, sets and rolls—Ready Lined Shoes and Unlined Shoes—Clutch Facings—Fan Belts . . .

You get personalized co-operation that can be depended on when you need it most . . .

And you can solve labor problems and get cars rolling quicker with Miley's Quick Exchange Service on Ready Lined Shoes.

Ask Your Miley Jobber

A NATIONALLY ADVERTISED LINE

"The Brake People"
BRAKE LINING • BRAKE SHOES • BRAKE PARTS

MILEY
INDIANA PLANT

L. J. MILEY COMPANY, INC.
1062 W. ADAMS ST. CHICAGO, ILL. 7

A LEAK-PROOF PRESS FIT

Victor Oil Seals are lathe turned or centerless ground to a tolerance of plus or minus .002".

The outer edge is maintained parallel to and concentric with the shaft. Close control of production insures an outside diameter slightly larger than the bore of the housing, making certain a leak-proof press fit.

AN EXCLUSIVE VICTOR FEATURE



VICTOR

OPERATING CHANGES FOR BEARING LIFE

(CONTINUED FROM PAGE 132)

condition, since if the breathers are plugged proper crankcase ventilation cannot occur. Of course, if additional insulation is supplied to the crankcase in the winter time, it is necessary that this insulation be removed for hot weather operation in order to produce optimum summer oil temperatures.

There have also been reported some devices which increase the amount of crankcase ventilation. One of the problems in connection with these devices is to prevent over ventilation of the crankcase which may produce other deleterious results. If dilution or water sludge is a serious problem in an operation, such devices should be investigated.

Engine Speeds

Where it has been necessary to use substitute bearings in an engine,

the engine operating speed must be controlled between both high and low limits if best life is to be obtained. High operating speed may produce excessive heat in the engine bearings as has been discussed above, and too low operating speeds may result in detonation and excessive high bearing pressures, which may cause the bearings to fail. Drivers should be instructed about shifting to prevent detonation.

The speed of an engine when the engine is used as a brake in going down hill is just as much important, insofar as bearing life is concerned, as the speed of the engine under load. Excessive engine speeds with no load on the engine and with high intake manifold vacuum causes severe loads on the bearings and in addition may cause severe crankshaft torsional vibration which ultimately will result in a broken crankshaft.

Engine Oil Troubles

The harder alloy engine bearings are subject, under certain operating conditions, to corrosive attack from oil oxidation and other deterioration products which develop in engine crankcases. The oil deterioration effects can be reduced by good crankcase ventilation as was discussed above. Also frequently the pits and apparent corrosion areas which develop in the harder alloy bearings are caused by loose fitting, as was also discussed above. Tin babbitt bearings are practically immune to all oil oxidation acids which develop in engine crankcases.

The new anti-oxidant and detergent additive types of oil are proving themselves helpful in preventing oil oxidation and bearing corrosion problems, and in addition, reduce certain types of deposits in the interior of an engine. The additive type oils are not panaceas, however, and they should be used only after consultation with an oil company's service representative who can analyze the operation.

Many gasoline service stations have discontinued handling the additive type engine oils because of the restrictions of sales to passenger car users, but they can stock and sell additive type oil exclusively for the use of truck owners.

END

(Please resume your reading on P. 53)

THERE'S LITTLE

Romance

IN A FOXHOLE

..... but a lot of *ESPRIT DE CORPS*

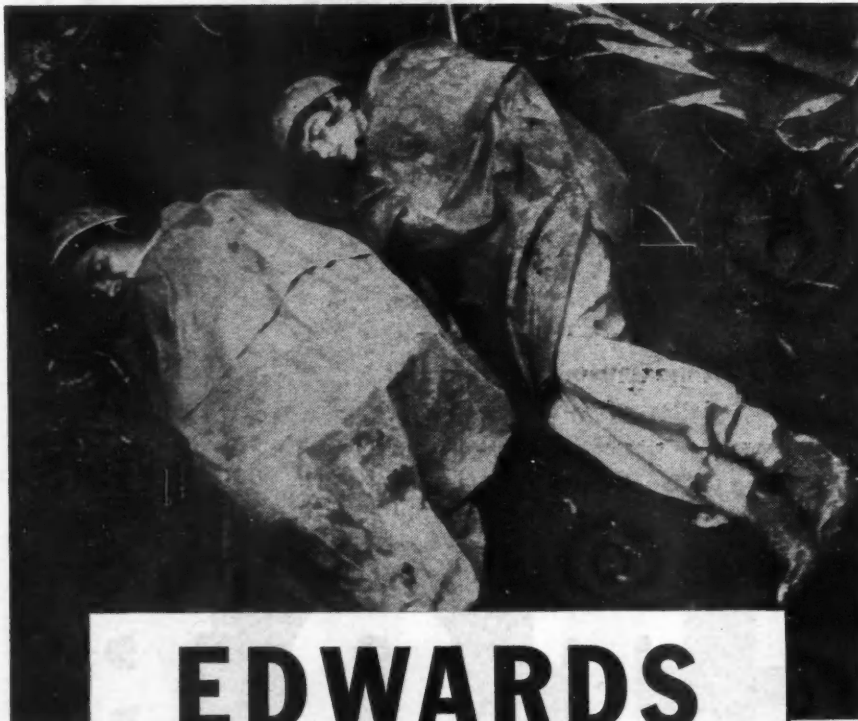
IT HAS been the lot of the infantryman to have one of the least glamorous...and one of the most important...tasks in warfare. Yet there is hardly an infantryman who isn't proud of the crossed rifles that are his insignia. Prouder still of the division he belongs to and its accomplishments. For the infantry has been "Queen of Battles"...and still is.

This pride contributes mightily to the esprit de corps that makes the infantryman a first-class fighting man, even when he is tired, hungry, dirty, footsore and ducking bullets in a foxhole.

Keep your eye on the infantry—the doughboy does it.

EDWARDS IRON WORKS, INC., SOUTH BEND, INDIANA

SIGNAL CORPS PHOTO



EDWARDS



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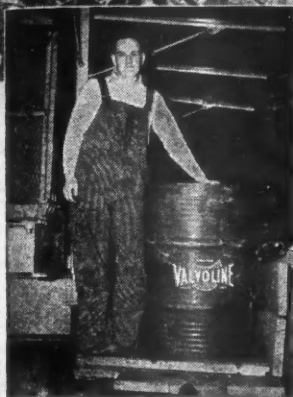
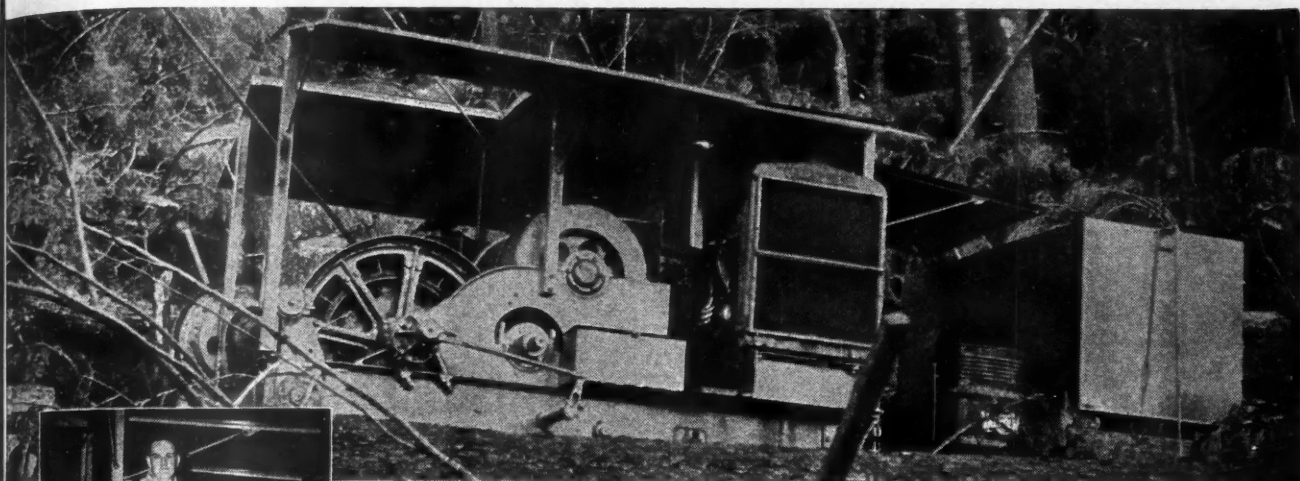
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RNAL



"Not a single bearing failure since we use Valvoline"

Reports

HEAVY HAULING COMPANY

Astoria, Oregon

HEAVY HAULING COMPANY
Heavy Equipment and Materials in Long or Short Hauls

April 17, 1944

Mr. T. E. Clare
Valvoline Oil Company
2306 N. Clark Avenue
Portland, Oregon

Dear Mr. Clare:

It may be useful to you and helpful to others to know that Valvoline really protects. We have not had a single bearing failure in any of our trucks for $7\frac{1}{2}$ years. Last spring we worked over the engines of three; each had over 110,000 motor miles. We were able to reassemble them with all the original main and con-rod bearings in each motor.

One of our fleet of White trucks has done over 140,000 motor miles, and we have never had to pull the pan off. This truck is still operating full capacity every day. In another White truck, with a Cummins Diesel motor, we have used Valvoline HFO SAE 20 for over 65,000 motor miles of very satisfactory operation.

In logging, we broke in our new donkeys with Valvoline HFO, and also use it in our Caterpillar tractor. On our oldest two-speed Diesel Berger yarder we have 2,740 working hours, with no motor failures on either this or our other Diesel Berger yarder. We contend that the long life of our equipment has been largely due to proper lubrication with good oils and greases which we have purchased 100% from Valvoline.

Sincerely yours,

A. F. Koppisch
A. F. Koppisch, General Manager
HEAVY HAULING COMPANY,
D & K LOGGING COMPANY

Heavy hauling and logging are rough on the motors of the trucks, tractors, and yarders operated by Mr. Koppisch—but with Valvoline protection he has achieved a remarkable record of trouble-free performance in gasoline and Diesel units.

A remarkable record, but not unusual among Valvoline users. Whether your own operation is large or small, Valvoline lubricants and Valvoline Fleet Laboratory Service can save you money. Write today to your nearest Valvoline office.

FREE—ask for your copy of the new edition of the Valvoline Calendar Wall Chart, with 2-year calendar and up-to-date recommendations just received from Chek-Chart.

VALVOLINE OIL COMPANY

500 EAST FIFTH STREET CINCINNATI 2, OHIO
New York-Chicago-Atlanta-Los Angeles-Vancouver
REFINERY IN PENNSYLVANIA

COSTS MORE TO MAKE — COSTS LESS TO USE

VALVOLINE

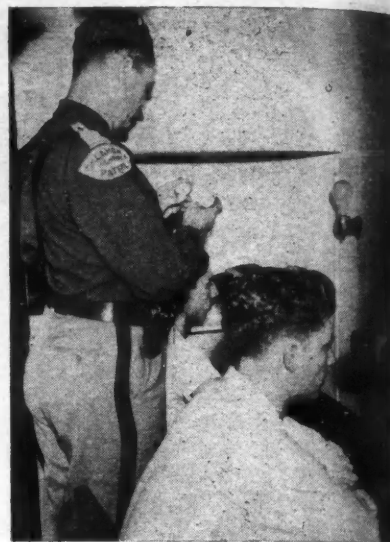
The 1st Pennsylvania Oil



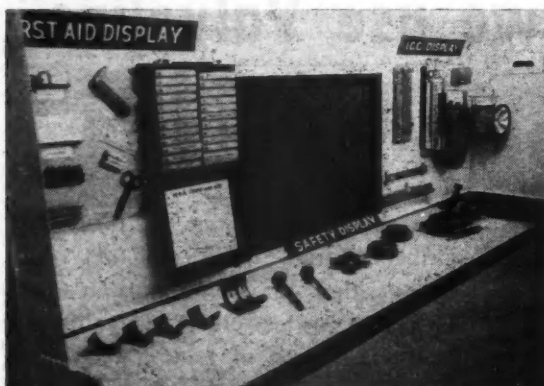
Oklahoma Trooper Bill Large giving Brambach side vision test to a driver



Another state policeman, Vern Gibson, giving the Keystone tests to a driver



Here drivers are getting the Feldman night blindness recovery interval test



Above at left: These displays supplement driver tests. Parts in foreground carry legends explaining what negligence on part of driver caused damage. Center: Commissioner of Public Safety for Oklahoma, J. M. Gentry. Right: Clinic in action

Truck Operator Aids State Safety Campaign

Mistletoe Express' mobile safety clinic participates in state-wide safety campaign as Oklahoma's accident rate jumps

WITH the manpower of the Oklahoma Highway Patrol depleted by more than 60 per cent of its authorized strength, and an increase reflected in the 1944 highway accident rate, the eight-ball

was definitely on its way to Oklahoma. Oklahoma, seven times winner in the Southern Division of the National Safety Council award for traffic safety; Oklahoma, home state of the Mistletoe Express covering

11,000 miles per day, and itself twice first place winner in the Large Fleet Inter-City Trucking Division of the National Safety Council's Contest for Safe Operations. Mistletoe was on the anxious seat. The Associated Motor Carriers of Oklahoma viewed the situation with growing concern and the Interstate Commerce Commission, with an ever diminishing pool of available trucks, prayed.

In January of this year, commissioner J. M. Gentry, and Chief Thaxton of the highway patrol; Rick Christensen and Harold Goff, of Mistletoe Express; R. K. Hagarty and Chet Hanley, of the ICC; and Bennett Bond and Clay Patterson, of the Associated Motor Carriers, sat in joint session in Oklahoma City to discuss what could be done about the problem. Out of this session evolved a campaign carrying the

(TURN TO PAGE 139, PLEASE)

Clinic staff, l. to r., H. H. Goff, tour manager; Trooper Gibson; Bill Church; Captain Davis; A. B. Callahan; Trooper Large

TRUCK OPERATOR AIDS STATE SAFETY CAMPAIGN

(CONTINUED FROM PAGE 136)

theme, "Conservation Through Safety."

This campaign was designed to attract attention to safety and conservation measures in use by the truck industry. It was hoped that the exhibits, demonstrations, tests, talks and printed matter which were a part of the program would give the operators themselves a new incentive for further effort toward a better safety program and a more intelligent conservation plan. Also, that city-wide "Safety Days" throughout Oklahoma communities, with general participation, might have a healthy effect on the attitude and skill of all individuals charged with the responsibility of operating motor vehicles, to the end that the accident rate on Oklahoma highways might be retarded.

It was decided to center the campaign around a unit to be known as the Mistletoe Mobile Safety Clinic. The clinic is housed in a 28-ft. tandem trailer carrying various visual and reaction tests. The idea behind these tests was primarily to acquaint drivers with their own driving weakness or deficiencies, if any, to the end that they might either do something about them or guard against them.

The testing equipment consisted of a Keystone Tele-Binocular, which tests vision for color discrimination, acuity, depth perception, etc., a Brambach Perimeter, for checking blind spots in the eye and side range of vision, a Feldman Adaptometer, to test degrees of night blindness, and a hand and foot time reaction test.

A panel along one wall of the trailer was mounted with worn or damaged parts with legends under each part explaining exactly what negligence on the part of the operator had caused the damage. A display board on the left of this panel carried a complete layout of first aid equipment, and another on the

(TURN TO NEXT PAGE, PLEASE)



KEEP FLEETS FIT *for* ACTION

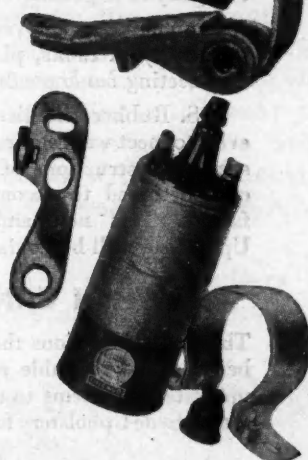
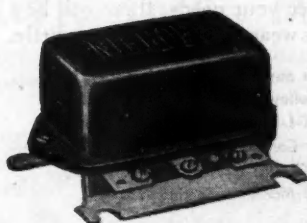
with

NIEHOFF APPROVED QUALITY PRODUCTS

Don't wait until a worn out ignition part interrupts an important schedule before you make "regular ignition check-up" a part of your maintenance program.

At the first sign of trouble, replace with NIEHOFF Approved Quality Products for dependability, extra service and improved motor performance.

Over 21 years of Ignition Leadership, plus a national network of NIEHOFF Jobbers waiting to serve you, leaves nothing to be desired. Ask your Jobber TODAY!

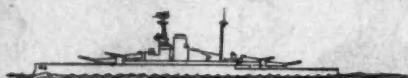


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BRANCH: 1342 S. Flower Street, Los Angeles 15, Calif.

BATTLE-TESTED



**TO BRING YOU A TOUGHER, LONGER-WEARING,
LOW-COST, FLAMEPROOF UPHOLSTERY MATERIAL!**



NAUGAHYDE, specially recommended for truck, airplane, theatre, restaurant seats...and wherever upholstery must cost little, look smart, stand wear.

U.S. NAUGAHYDE*

Reg. U. S. Pat. Off

You simply couldn't put any upholstery to more severe usage than Naugahyde is getting today.

From flameproof coverings on fighting ships, to wear-resistant seat upholstery in tanks, planes and trucks, Naugahyde coated fabrics are meeting *battle* conditions...with toughness to spare.

U.S. Rubber scientists have made Naugahyde more rugged than ever, to meet war requirements—and in addition they have developed special constructions of coated rayon, nylon, and other substances, each designed to accomplish a specific purpose better than other fabrics. This new and vastly improved family of Naugahyde Upholstery will be yours to adopt some day.

WHEN CAN YOU HAVE THEM...?*

There are indications that limited quantities of some materials may be generally available even before the war is over. So bring your upholstery problems to us *now*. Whatever your needs, there will be a Naugahyde Upholstery for you that resists wear, looks smart, costs little.



(*) NAUGAHYDE is now available on priority, to conform with the following specifications: 34L13 Bureau of Ships; E-KK-L-136a, Type 3 Federal Specification; 12026A Air Corps Fireproof Specification; 27F11 U.S. Navy; AXS-992 Ordnance Department; MN245 (Both Types) Maritime Commission.

SERVING THROUGH SCIENCE

United States Rubber Company

1230 Sixth Avenue • Rockefeller Center • New York 20

TRUCK OPERATOR AIDS STATE SAFETY CAMPAIGN

(CONTINUED FROM PAGE 139)

right, a complete layout of the safety equipment required for commercial operators by the ICC regulations.

The highway patrol furnished all the personnel for conducting the tests and grading them as well as the personnel for conducting equipment tests held outside the trailer.

Based upon the time consumed by the slowest test, it was estimated that 120 people could be examined in the clinic in a 10-hr. day. Commercial drivers, in view of the greater number of driving miles they represent, were given preference. Tickets were sent to each town one week in advance and were issued through a local civic organization sponsoring the safety day in that town. Every man successfully completing the test was issued a certificate signed by Mr. Gentry, which carried on the reverse side the exact grades on all tests.

Public acceptance of the Mistletoe Safety Clinic has been an endless source of gratification to the men who worked so long and diligently, planning the most intimate details of its practical use. The clinic began its state-wide tour on May 1, and has met with unanimous and enthusiastic acceptance at every stop.

Many men are found who have drastic weaknesses in one eye or the other, most of them totally unaware of their condition. Many other interesting discoveries have been made by the clinic personnel, but the thing that pleases them most is the fact that so many of the deficiencies found are easily correctible under the guidance of an experienced eye specialist and the apparent eagerness of the driver to take these steps.

Harold Goff, the Mistletoe Safety Engineer, who spent four months of research before the clinic was released, and who is now acting as tour manager, feels definitely that this clinic and the work it is doing, is the greatest contribution to highway safety ever put into operation. A staff of three highway patrol officers, has been permanently assigned to the clinic and they conduct all tests and examinations made in it. These tests and examinations have no bearing on the driver's license of the

(TURN TO PAGE 142, PLEASE)

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THE FIRST THING IN THE MORNING

It takes only a few minutes one morning a week to check the condition of your truck batteries. The reward is longer battery life and little danger of a tie-up on the road because of unexpected battery failure.

Make sure that the plates are properly covered . . . the battery tight in the carrier . . . that each cell gives the proper hydrometer reading . . . that there is no corrosion around the terminals.

Lengthening battery life is essential to the war effort—it saves precious materials needed on the fighting fronts. But even with the best of care, batteries will wear out in time. Then replace with Globe Spinning Power, the battery that's especially built for wartime replacement service, a battery's hardest job.

Send for new and revised Battery Manual. Address nearest factory.



GLOBE-UNION INC., Milwaukee 1, Wis.

ATLANTA • BOSTON • CINCINNATI • DALLAS • KANSAS CITY
LOS ANGELES • MEMPHIS • MINNEAPOLIS • PHILADELPHIA • SEATTLE



CJ-944

GLOBE

Spinning Power
BATTERIES

(CONTINUED FROM PAGE 140)
people examined. They are designed only as an educational feature to acquaint drivers with their weaknesses.

At this writing, the only problem is in the intelligent rationing of the clinic, so that the most good can be done with it. Every effort is being made to confine examinations to those drivers who represent the greatest number of driving miles.

Statements by R. K. Hagarty, district director of the ICC, Little Rock,

Ark., and commissioner Gentry are to the effect that the popularity of this clinic will increase to the extent that it will be necessary to operate it as a year-round project.

It is found that many drivers approach the clinic in a spirit of skepticism but, without fail, they have been tremendously enthusiastic upon completion of the examinations.

On the present schedule, more than 600 drivers per week are being examined.

Better
BECAUSE IT'S
Basic!



**Basic and Irresistible as the
Pull of Gravity**

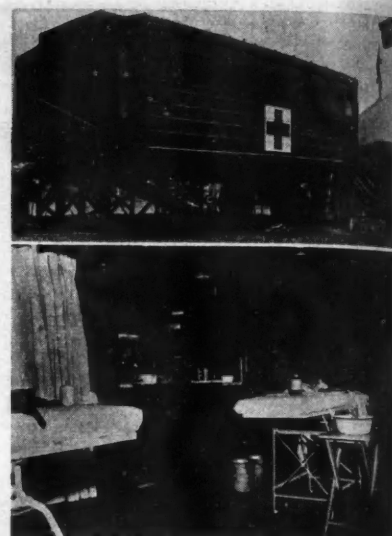
Because of its basic soundness and simplicity, the Bendix Starter Drive can be adapted to virtually any type of vehicle. It is in use today in over 60,000,000 installations—automobiles, tractors, tanks, trucks, jeeps, PT boats, and helicopters. The wide acceptance of the Bendix Starter Drive is based on such out-

standing advantages as these: impossibility of damage by accidental engagement of the starter pinion; higher break-away torque which gives increased cranking power; rugged, durable construction; low-cost operation. Remember Bendix Starter Drive—*it's better because it's basic.*

Bendix Drive

ECLIPSE MACHINE DIVISION

BENDIX AVIATION CORPORATION, ELMAIRA, NEW YORK



Increased care for wounded American soldiers is made possible by the new Emergency Mobile Unit, designed in accordance with Army specifications for the armed forces by the Expandable Vehicles Division of Hub Industries, Inc., Long Island City. The expandable body permits an increase from the legal maximum width of 8 ft. for moving on highways to a width of 14 ft. 3 in., when used as an operating room or for other purposes. When used as set up, the Expandmobile is large enough to enable two surgeons and their helpers to operate simultaneously. The expansion of the unit may be accomplished manually or by hydraulic motivation. In peacetime the Expandmobile is expected to be valuable whenever greater room is required off the road than the legal highway width of 8 ft.



Rolling off the production line, the first Diamond T commercial truck to be built since January, 1942, receives the official O.K. of Hank Schwabe, chief tester. Current schedule for the next six months is 2887 vehicles

J. E. Neff, appointed to the headquarters staff to assist in the merchandising of lubricating equipment of The Aro Equipment Corp.



Long Life flexible lines for long Mileage transportation

Yes — that pleasure car that travels on an "A" coupon may get by with inferior flexible tubing for fuel, oil, and air lines . . . But manufacturers and operators of heavy duty commercial vehicles *know* that Titeflex is the only flexible line that does not demand frequent replacement.

Today there are buses and trucks on the road that have travelled hundreds of thousands of miles. Such service would have seen ordinary flexible lines replaced many, many times, while in many instances the original Titeflex lines are still in service.

Why does Titeflex stand up? Because it is all-metal, yet flexible. Gasoline and oil cannot affect Titeflex. Heat and cold do not cause it to deteriorate. If Titeflex lines are not standard with you — just write, and we will gladly furnish other information. While direct war orders from Uncle Sam still are and will be first with us, we are doing our best to supply the essential commercial operators of automotive equipment.

TITEFLEX, INC.
525 Frelinghuysen Avenue
Newark 5, New Jersey



Titeflex

Here's What's New in Hydraulic Units

TOWER LIFT with Low Initial Height

Here is the answer to a modern Tower lift—new simplified design, new engineering, new type construction and new low cost.

This new tower is a design achievement which permits improved body styling, has low initial height with extreme elevations. Tower is controlled from the lift platform which is operated by twin telescopic rams. These units can be adopted to meet your requirements—from the streamlined truck to the open back utility truck.

Patented

DUMP HOIST for $\frac{1}{2}$, $\frac{3}{4}$ and 1 Ton Trucks

Here's a new, lightweight, high pressure hydraulic dump hoist which permits high speed dumping. Low mounting and low loading height, under 48". Two hydraulic rams offer utmost stability and enable operator to raise and lower dump while truck is in motion. No subframe... fewer "wear out" parts... ideal for hand loading. Designed for the lighter jobs, up to 2000 pounds payload.



Descriptive literature available. When writing please advise in which unit you are interested, Towers or Dump Hoists.



BIRD-WHITE COMPANY

DEPT. 4, 3119 WEST LAKE STREET, CHICAGO, ILLINOIS

CCJ NEWSCAST

(CONTINUED FROM PAGE 78)

Chevrolet Dealers to Hold Two-Day Conferences

More intensive and expedient methods of conserving the nation's vital truck transportation facilities for the duration of the war, and a well-charted course for dealers to follow truck-wise in the critical days of the early post-war period, are major subjects of a series of two-day Chevrolet truck conferences in key points from coast to coast during the next two months.

"Unless dealers and owners cooperate in still further efforts to maintain all vehicles, our entire civilian transportation system will be in a critical condition by July, 1945," said W. E. Fish, manager, commercial and truck department, Chevrolet Motor Division of General Motors. "The truck situation is particularly acute. We know from the current mortality rate of 1000 trucks a day that a year from now a million former truck owners will be without trucks. The principal aim of our extended summer program is to do everything possible to help alleviate a critical situation in highway transportation."

Truck Freight Volume Drops

Volume of freight transported by motor carriers in June decreased one per cent from May and a like amount from the corresponding month in 1943, the ATA reports.

Trucking companies in the south apparently were hardest hit by the shrinkage. June tonnage in that area was 4.7 per cent smaller than that of May and ran 6.9 per cent below the level of June, 1943.

The ATA report was based on data received from 312 motor carriers in 43 states. The carriers handled an aggregate of 2,482,428 tons of freight in June, compared with 2,506,275 in the preceding month and 2,508,000 in the like period a year earlier.

(TURN TO PAGE 252, PLEASE)



E. E. LeVan, vice president and general manager of Haynes Stellite, a unit of Union Carbide & Carbon Corp., has been elected president

THE GRIPE DEPARTMENT

(CONTINUED FROM PAGE 48)

moving the air cleaner from the carburetor. This same unit has such a small filler pipe that the oil won't run in as fast as the average oil-can will pour, resulting in spilling oil on the motor and on the floor. This condition creates a fire hazard and a dirty garage floor. Extending the length and width of this filler pipe would eliminate this trouble.

On some cars and trucks more time is required to remove accessories from under and around the oil pan than is required to remove the pan itself. There is no real good excuse for this. Why must fuel pumps be hid so well? We know they are there if we can just find them. After they are found, how to get to them is also a question.

Everyone has sludge trouble. I believe a better ventilated crankcase would help to remedy this condition. Some units do not have an ammeter but have a battery gage instead. This has proven very unsatisfactory because the generator can be ruined before the driver discovers any generator trouble.

The battery is the most neglected accessory on a unit. Place all batteries under the hood where it will receive the care and attention they require to give good service.

Why not enlarge all gasoline tank filler pipes so as to avoid spilling while filling. This is not only wasteful but creates a dangerous fire hazard.

Some cars have a whistle attached to the gas tank which whistles while being filled and stops whistling when full. An excellent idea.

MILO SHUCK,
Garage Foreman, Railway Express
Agency, Sioux City, Iowa.

Tractor Connections \$10
THE GRIPE DEPARTMENT,
DEAR SIR:

Have worked 21 years here and 12 years before that, when trucks were a commercial vehicle and not an overgrown touring car with a front portion that is a symphony in tin.

As a large number of these units

are sold for tractors with a semi-trailer, there is no provision for attaching the brake control valve and making the air connections for same.

There is only one place for it that is an accessible position for the driver.

This places it on a thin tin instrument board that is hard to get behind to hold the nuts and usually blanks out some of the gages, etc., besides being hard to connect the tubing to.

Also no provision is made for a signal arm and the controls thereof,

although its use is mandatory in most states.

Thanks for the "Gripes Department" as the hardest job to do is the most senseless one.

S. G. BARNARD,
Fleet Maintenance, Lloyd Transfer
Co., Seattle, Wash.

END

(Please resume your reading on P. 49)

More new items in the EBERHARD CATALOG NOW BEING COMPILED

• In addition to containing the regular EBERHARD fittings of proven dependability, it pictures and describes new and improved items for better service to the trucking industry.

• Some of these were previewed for you in last month's advertisement and here are a few more of interest.

• Register your name today for a copy of the new catalog.

★
No. 6411—Steel Footman Loop. A stronger loop available in all the popular sizes.

No. 188—Offset rope binding hook.

No. 5657—Inside Lock Handle with $\frac{5}{16}$ square hole and set screw.

No. 5370—Auxiliary Seat iron (automatic folding) for taxicabs, ambulances, etc.

No. 7751—Chain Grab Hook.

• EBERHARD's new catalog now rapidly nearing completion is really "something to look forward to."

No. 6411

No. 188

No. 5370

No. 5657

No. 7751

Send your Name for Catalog
EBERHARD
MANUFACTURING CO. 
DIVISION OF
EASTERN MALLEABLE IRON CO.
CLEVELAND, OHIO

MAIL COUPON NOW!

Eberhard Mfg. Company
2754 Tennyson Rd., Cleveland 4, Ohio
Please register my name to receive copy of New Catalog.

Name _____
Address _____
City _____ State _____

QUIZ ANSWERS

CCJ Quiz on Page 80

1. c. Headquarters for the Motor Transport Corps of the U. S. Marines is at Quantico, Va. Here, 350 Marine mechanics—including Lady Marines, too, if you please—are repairing everything from a jeep to a 3-ton truck on an “around the clock” schedule.

2. d. Lt. Gen. Somervell, chief of

the Army Service Forces, in urging the truck industry to step up the production of heavy trucks, cites these trucks to be as important as our B-29 superfortresses. The B-29's, you know, are the bombers that are bringing the war straight to the heart of the Jap homeland.

3. a. Storage batteries in Army motorized equipment in Alaska and the Aleutians are protected against freezing by mineral wool insulation. Temperatures there reach 40-below-zero.

4. c. The Petroleum Administration for War has decreed a top limit of 70 octane rating for regular grade or housebrand gasoline. Premium gas is limited to an octane rating of 76. Object is to conserve tetraethyl lead for 100 octane gas for our planes.

5. c. The Office of the Rubber Director. With synthetic rubber being produced at the rate of 836,000 long tons annually, compared with pre-war imports of crude rubber ranging up to 650,000 long tons a year, Colonel Bradley Dewey feels that the main goals have been achieved and has resigned as rubber director with the recommendation that his office be contracted into a division of the War Production Board.

6. b. Lord Mountbatten, who is chief of the India-Burma sector, provides beer for his front line troops with “traveling breweries.” Army trucks are fitted out with a complete plant, including a boiler for water, a mash-tub, a copper boiler for boiling the extract with hops, a cooler, and fermentation vats. Have any of our generals come from them that Kentucky hills?

7. b. Because of the surplus of aluminum over and above war requirements, several states are now investigating the prospect of using aluminum license plates. Aluminum plates are non-rusting, weather-proof, and naturally attractive. Connecticut has used such plates since 1937.

8. b. The Weasel, produced on converted automotive assembly lines at South Bend, can operate over a greater variety of terrain than any other vehicle. It will traverse snow, deep mud, swamp land, sand; paved highways, or steep slopes. Equipped with broad, full-length tracks with rubber pads, this vehicle is said to exert only one-fourth as much pressure upon the ground as one fully equipped infantryman.

9. a. You should associate it with brakes, because “Hydrovac” is the name given to Bendix Products’ new power braking system. The “Hydrovac” system combines all the elements of vacuum braking into a single, self-contained unit.

10. a. It takes one truck for every ten soldiers. A recent report shows that 1,300,000 trucks have been built for our armed forces and lend-lease in the past three years. Can you match that, Hitler, Hirohito & Co.?



● A truck's time is a precious thing, these days. Not only are trucks scarce, but they are getting scarcer! So these are times when every truck *must* work harder. How? Well, the first step for you to take is to write for our helpful booklet shown above. This valuable 16-page illustrated booklet on truck management shows *ten ways* for you to detect and eliminate those odd moments of **IDLE TIME**, sometimes small in themselves but adding up to a *lot* of waste in the aggregate. Write for the booklet today—it's **FREE**.

THE SERVICE RECORDER CO.
1375 Euclid Avenue • Cleveland 15, Ohio

The Servis Recorder
Tells Every Move Your Truck Makes



No Grade Too Steep—

No Mud Too Deep

For Spicer Products on Every World War Front!

• In war and in peace, Spicer Universal Joints and Propeller Shafts have carried America forward for over 40 years. Almost every type of vehicle in the Armed Forces is wholly or partly equipped with dependable Spicer products. In this service they have proved the worth of Spicer design and construction . . . and have afforded invaluable opportunity for technical research and improvement. Spicer facilities will be ready for immediate production when authority is given for civilian automotive manufacture. Spicer Manufacturing Corporation, Toledo, Ohio.



BROWN-LIPE CLUTCHES AND TRANSMISSIONS • SALISBURY FRONT AND REAR AXLES

SPICER UNIVERSAL JOINTS • PARISH FRAMES, STAMPINGS

Gen. Somervell Praises War Job of Trucks

Lt. General Brehon Somervell, commanding general of Army Service forces, gave a graphic picture of the Army's truck need at a conference in Washington with truck industry representatives when he pointed out that "almost every pound of supplies must move by truck when landed

overseas." And each of the more than 4,000,000 soldiers overseas must receive a ton of additional maintenance supplies each month, not to mention the additional thousands of tons for the reinforcements going over each month, he added.

"From the Normandy Beachhead

up to the St. Lo front we are almost entirely dependent upon truck transport—the area west of Carenten has been flooded by the Germans, leaving but few roads for supply, which places a premium upon the maximum load per truck to reduce congestion," General Somervell explained.

Continued Allied bombings have destroyed many railroads in France and the Germans will destroy others as they retreat, so that again "a premium will be placed on truck transport as the Allies push forward in France."

Also, the faster the advances of the Allies become, the more demand there will be for trucks so that ammunition, food and equipment can keep their pace, General Somervell said, stressing at this point that the rapid advance in Italy has been possible because "our supply lines by truck have kept a constant flow forward of ammunition, food, gasoline for our planes, medical supplies, and all of the 700,000 items of supply our troops require."

Forty per cent of our trucks are going to the British, Russians and Chinese "and are one of the most important items of supply America is contributing to these fighting forces," General Somervell said, adding that American-built trucks are today making possible the huge advances of the Russian armies "and are hastening the destruction of our enemies."

"Our guns will be pulled and the supplies and troops will move into Berlin and Tokyo by truck," he stressed, "and this advance dare not be delayed by any shortage."

Another urgent demand on the truck program, he said, is that of replacement of vehicles lost in combat, as well as vast quantities of spare parts which must be rushed to the many fighting fronts. Emergency requisitions resulting from special operating requirements also have greatly taxed present truck resources, he asserted.

Vital jobs of the heavy trucks are pulling the 105 Howitzer and the 155-mm Long Toms, transporting ammunition, equipment and other supplies from bases to the active units in the fighting lines, to exploit breakthroughs in enemy lines and to extend lines of communications to keep pace with a steady advance. They are replacing lighter trucks to (TURN TO PAGE 184, PLEASE)



Now Available! Limited Supply of BEAR FRONT-END OUTFITS!

The day you have been waiting for has arrived! Urgent need for Bear Heavy-Duty and Light-Duty Alinement Outfits can now partially be met due to revisions in the War Production Board's L-270 order which enables us to do a better job of supplying you with needed tools and equipment.

ACT NOW . . . so to be sure to get a Bear Outfit for faster, easier and absolutely accurate checking and correction of Caster, Camber, Toe-in, King Pin, Tracking and Turning Radius of any car or truck! . . . Bear Mfg. Co., Dept. CCJ, Rock Island, Ill.

New L-270
makes MORE
BEAR EQUIPMENT
AVAILABLE

See Your Jobber or
write us!
Help Save Tires and Cars

Heart of Tire Conservation is
BEAR
Wheel Balancing and Alinement

A GUIDE TO GIVING VETERANS THEIR JOBS

(CONTINUED FROM PAGE 60)

If there is a change in the employer's circumstances whereby it would be unreasonable or impossible for him to re-employ, it is not incumbent upon the employer to provide employment. The facts and circumstances in each case will decide what is unreasonable and impossible. The mere fact that the veteran would displace a non-veteran who may be receiving less wages in that position would not be considered unreasonable or impossible. The use of women in these positions, where post-war promises have been given, would not be considered in the light of impossible or unreasonable.

An employer cannot require a veteran to accept employment in a different location if the employer is presently established at the place of the veteran's former employment. This does not mean that there cannot be a change of location for the veteran, but that is a decision to be mutually agreed upon by the parties.

A veteran is entitled to re-employment without unnecessary delay. The act uses the phrase "immediate re-employment" but common sense prevails and the usage of this phrase doesn't mean "instantly." It means the employer will re-employ with a minimum period of delay. If, for example, a physical examination is a pre-requisite to employment, a reasonable length of time for the screening of the physician's report is allowable.

Attitude of Veterans

In these turbulent times labor problems and conditions are in many areas problems of major importance. What is noticeable and prevalent is the lackadaisical attitude towards work and the disrespect to the employer. These aren't idle words—the conditions mentioned are not confined to any one particular area, but are fairly general. In the past few weeks I have discussed with personnel men in various industries the veteran's attitude to his work and his employer. Has his attitude towards his work improved? Is there more, or less, respect for his employer? The too few comments I have had on this subject lead me to believe there

is a distinct improvement, both in attitude to work and in the matter of respect to employer. This cannot be accepted as the criteria for all returning veterans, and the few comments I have heard on this subject do not form a pattern.

The re-employed veteran cannot be discharged from his position within the period of one year—unless the employer can show cause. What constitutes cause would be a collective record of facts which govern all the employees of that establishment.

The liberal use of common sense certainly should prevail.

The opportunity of retraining veterans for the motor carrier industry was never more timely than at the present. The most improvement can be accomplished in the job classification of drivers—road and city.

It isn't necessary to create higher standards in driving classification. To do so might clearly be a violation of section 8. However, there is nothing in the act itself which would pro-

(TURN TO PAGE 158, PLEASE)

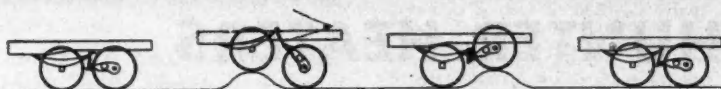
NO PRIORITY

OR

CERTIFICATE OF TRANSFER NEEDED TO GET ★

TRUXMORE

WORLD'S BEST 3RD AXLE



IT'S EASY NOW—TO
IMPROVE THE EFFICIENCY
AND INCREASE THE CAPACITY
OF YOUR NEW AND USED TRUCKS.
NATIONWIDE SALES AND SERVICE
THRU TRUCKSTELL DISTRIBUTORS.

★ SINCE JULY 1, 1944

WRITE FOR BULLETIN #34

"A TRUCK SHOULD BE
A MONEY MAKING
MACHINE"



SAFE...EFFICIENT AUXILIARY HEAT



HUNTER HEATERS for Trucks...Trailers

- Heating capacity and ability to withstand rugged conditions have been thoroughly tested in army tanks and trucks. Compact model illustrated has controllable heat range from 15,000 to 25,000 Btu/hr. Others with higher output for special requirement. Any good mechanic can install them. Easy to service.

HUNTER HEATERS for Busses...Personnel Carriers

- Same type and variety of units as described above. Simplicity of installation and operation make them ideal either as auxiliaries for pre-heating or for efficient heating en transit, where electrical equipment of the carrier is adequate to supply small blower. Flame "Sealed in Steel", combustion exhaust outside of vehicle.

BULLETIN HG-4

Describes all types of Hunter Heaters

HUNTER AND COMPANY

Transport Equipment

1560 E. 17th St.

CLEVELAND • OHIO

A GUIDE TO GIVING VETERANS THEIR JOBS

(CONTINUED FROM PAGE 157)

hibit a fleet operator from having the veteran undergo the same training that has been used as a wartime measure. It shouldn't be our intention or desire to set standards that are unreasonable. Unless there is definite proof of eye injuries to the veteran as a result of combat service in the land or naval forces, the use of the Keystone Visual Acuity System is advocated. Personnel men familiar with the practical use of this form of eye examinations will readily agree it has a definite bearing on the reduction of accidents. In my opinion reaction time and proper vision are the keynote of success in local and long distance driving. There is more to be learned from the use of this scientific device than can be obtained in the routine check of the examining physician.

On the important subject of medical history of the veteran, it is quite likely the medical history may find its way into the registrant's cover sheet in his local board. This doesn't mean that the medical history is available for review by the returned veteran or his employer. On the contrary, this is considered confidential information and is inviolable. Any information of a medical character that is desired must necessarily be referred to the branch of the service from which the veteran was separated.

Physical Fitness

Many questions will arise as to the physical fitness of the veteran to, resume his former duties. Until there is more complete and concise medical information on the subject, we will have to depend solely upon the ability and thoroughness of our examining physician. The physical fitness requirement of the Interstate Commerce Commission should be sufficient to handle the majority of cases. Medical cases whereby mental disturbances are the source of trouble, will be more difficult to judge.

It is regrettable that there is a lack of medical service available to industry on veterans with mental disturbances. This latter affliction is the

(TURN TO PAGE 160, PLEASE)

Trained tire men ready to help truck owners through rubber crisis

B. F. Goodrich conservation program gets extra miles out of tires.

HERE'S help in keeping your trucks running. Despite the growing shortage of truck tires, you can keep more trucks on the road by increasing tire mileage through scientific maintenance.

B. F. Goodrich offers you the services of trained tire men. They will take over complete supervision of tire maintenance, assure you of the greatest possible service from every casing. Under this program a B. F. Goodrich tire consultant makes a thorough study of your operation. Among the many things he checks are loading docks, garages and parking areas, for conditions which affect tire life; the vehicles themselves to determine causes of unusual tire wear conditions resulting from mechanical irregularities such as wheel or axle misalignment, improper caster or camber, defective brakes and springs; sizes of loads and load distribution; routes traveled; air compressors, accuracy of air gauges and use of valve caps; matching of duals; the tire record system used, and dozens of other details, all of which affect tire wear.

Regular inspections made

The B. F. Goodrich man makes complete and detailed recommendations. He advises as to when and how tires should be scrapped, repaired or recapped. He checks the operation regularly, works closely with your maintenance men, helps them constantly.

The result is increased tire mileage, a reduction in road delays, improved efficiency, lower maintenance costs and longer equipment life.

Hundreds now saving

So successful has this plan been that many of the country's largest fleets now use the service. Hundreds of truck owners are today saving rubber and money under this program. For example:

A large common carrier saved an estimated 466,000 tire miles through tires recovered from the scrap pile alone.

A hauler reduced road delays to one in 1,356,000 miles.

Mileage of rear tires in a small fleet was increased 15% through correction of irregular wear.

In another fleet tire inflation records showed an increase from 25.6% properly inflated to 98%, resulting in greatly increased mileage.

These are typical of the specific savings and improvements reported by truck owners wherever this plan is used. In every fleet greater tire mileage and efficiency is assured through the proper application of scientific maintenance methods.

Cost is low

The cost of the B. F. Goodrich conservation service is low. Rubber savings begin immediately. If you act quickly, you can get the benefits of this proven program which has been in operation for more than two years. A limited number of trained men are still available to take over additional fleets. For full information wire or

phone The B. F. Goodrich Co., at the address below, or send in the coupon.

A few typical users

Here are a few of the fleets now operating under the B. F. Goodrich Tire Conservation Program. Add your name to this list and protect your trucking operation:

Company	No. of Vehicles
Associated Transport, Inc., N. Y. C.	3283
Borden's Farm Products, New York City	791
Cleveland Cartage Co., Cleveland	299
Coca Cola Bottling Co. of Rhode Island	111
General Baking Co., New York City	897
Great Southern Trucking Co., Jacksonville	246
Hayes Freight Lines, Mattoon, Ill.	1200
Kroger Grocery & Baking Co., Cincinnati	1232
Mason & Dixon, Kingsport, Tenn.	393
State of Michigan Highway Dept.	1150
Western Express Co., Cleveland	140

Other names on request. More than 300 companies are now using this service.

In war or peace

B.F. Goodrich

FIRST IN RUBBER

Tire Conservation Dept., Room 102
The B. F. Goodrich Co., Akron, Ohio.
Please give me full information on your fleet tire conservation program.
Company _____
Address _____
Attention of: _____
Number of Running Wheels _____

A GUIDE TO GIVING VETERANS THEIR JOBS

(CONTINUED FROM PAGE 158)

one most likely to escape the examining physician. How to guard against that contingency is really a problem.

In my discussion of this point with medical men, they offer the suggestion that manifestations of a mental disturbance may assert themselves more readily under actual working

and driving conditions than from a clinic examination. By all means, we should make it mandatory that the returning veteran who is to be reinstated in a driving position subject himself to a physical examination under the terms and conditions stipulated and set forth on the recommended medical form of the Interstate Commerce Commission. Unfortunately this will not be a cure-all, in so far as the mental cases are concerned, but an alert physician may discern some mental disorder

which would necessitate the attention of a neurologist or a psychiatrist.

In organizations of sufficient size, where driver supervisors are in use, the problem is considerably lessened. Greater care and vigilance must be exerted in the manner of checking the driving activities of the veteran. Under these conditions the driver supervisor is able to make student runs with the returned veteran. Thus, he has a first-hand opportunity of watching him perform under usual hazards and conditions and can readily gage his reaction under every type of driving conditions. Be governed by his report and if it is unfavorable to the veteran, it would be well to refer the individual to a neurologist for his opinion.

A minimum number of student trips by the supervisor should determine, without any question, the fitness of the veteran for the job. In organizations where a driver supervisor is not available for this purpose, the problem is more complex. A senior driver who has established a record of efficiency and safety with his company would be the logical choice in the absence of a driver supervisor. Calling to his attention of the senior driver the grave responsibility that is being placed on him for the observation of the veteran on student trips—if properly explained—should result in a fairly accurate report of the veteran's present skill and reaction to hazards of city and road traffic, and his fitness for the work.

Replacement of Women

It isn't too early to start giving thought to the reinstatement of veterans to jobs in our industry formerly handled by them, and now handled by women. Dismissing women or downgrading them will necessarily demand tact. The motor carrier industry, since hostilities began, has consistently operated undermanned and understaffed. For this reason alone dismissal of employees who have replaced veterans isn't indicated.

Those employees who have used sufficient foresight to operate merit rating programs and maintain collective records of fact should greatly benefit by their records. It will permit employers to evaluate the efficiency of every worker in their em-

(TURN TO PAGE 162, PLEASE)

The Day of Miracles is Not Over!



The RBC
ROLLER BEARING
DISTRIBUTOR

is

Everywhere at Once!

No matter where you are located, R B C ROLLER BEARINGS are available or can be obtained on reasonable notice. The R B C Distributor's service is available to you in large cities or small towns throughout the length and breadth of this land.

In large cities there are frequently several R B C Distributors who supply garages, fleet accounts, car dealers and small industrial plants by means of R B C's complete catalog coverage of all popular applications.

Small town Distributors, in addition to all this, cover your needs in relation to farm machinery, earth-moving equipment, etc.

The R B C Distributor has made a tremendous effort to serve you during these last two or three difficult years. He is worthy of your continued patronage.

**ROLLER AND NEEDLE BEARINGS FOR AUTOMOTIVE,
AIRCRAFT AND INDUSTRIAL USE**

ROLLER BEARING CO. of AMERICA
TRENTON NEW JERSEY

Engineering

Forty-one years' specialization has given the Long organization an unusual background of experience in heat exchange unit engineering and manufacture. War accelerated new developments, many new applications, and added substantially to our knowledge of the field. This engineering and manufacturing experience will be turned back to peacetime production when peace comes.

LONG MANUFACTURING DIVISION
BORG-WARNER CORPORATION
DETROIT 12, MICHIGAN • WINDSOR, ONTARIO



LONG

CLUTCHES • RADIATORS • OIL COOLERS

A GUIDE TO GIVING VETERANS THEIR JOBS

(CONTINUED FROM PAGE 160)

ploy over a given period of time. Because of the demand for manpower during the emergency—the type of labor added to the payrolls is greatly inferior to that enjoyed in peace times.

Make no mistake, employers operating under labor contracts with closed shop agreements, aren't going

to be able to take the axe and literally chop off heads—they're going to have to prove their right to dismiss. It's going to be done the hard way for those employers who haven't availed themselves of the modern approach and method of labor relations.

A great number of operators are still operating under the old system. "If my memory serves me right," or "If I can recall," or "It seems to me." It's going to take more than a memory jogger to separate inefficient

workers from the payrolls who by their service have acquired certain seniority rights.

During the past year or two, and because of the excessive labor turnover, they have acquired seniority rights that are fairly high. Below them on the seniority list may be other workers who from an efficiency standpoint greatly excel them. Their local union isn't interested in what you allege from a memory standpoint as to the junior man being more efficient than the individual with greater seniority rights. To satisfy that local union you're going to have to produce efficiency ratings, and collective record of fact that will permit you to dismiss these workers who have acquired higher seniority privileges.

Problem of Undesirables

This industry can only survive if it is permitted to receive from the worker an honest day's work for a reasonable rate of pay. If the motor carrier payrolls are to continue to be clogged with drones and incorrigibles, with small chance of their removal, it can only be a question of time until there is utter chaos.

It can be assumed labor will cooperate in the removal of undesirables, provided you can prove to their satisfaction that the employee in question is utterly unsuited for the work—is inefficient, careless, and indifferent. You can't expect labor to accept these charges based solely on memory. They will recognize an intelligent merit rating program and an equitable recording of pertinent facts relative to this employee's ability in the job, his attitude, and his series of mistakes, compiled over a reasonable period of time. It's distressing to have to admit the motor carrier industry has been so lacking in failing to recognize what portends to be one of the most important fields of work in their industry.

END

(Please resume your reading on P. 61)

Fruehauf Elects Two New Directors

Robert S. Kirksey, vice-president in charge of Pacific Coast operations, and F. Malcolm Reid, vice-president in charge of engineering, were elected to the board of directors of the Fruehauf Trailer Co.

AN AMAZING DEVICE To Keep Wheels Pulling



THORNTON
Automatic-Locking
DIFFERENTIALS

YOUR TRUCK keeps moving on through deep snow, sand, dirt, even mud, muck or over sleet and ice when you install this truly Automatic-Locking DIFFERENTIAL in place of the conventional type.

It eliminates one wheel going dead and other wheel spinning. Both wheels must rotate when power is applied.

War-tested . . . easily installed . . . gives year 'round tractive performance, forward, backward or turning. Tens of thousands in war service for the United States and Canada.

Models readily available for the following 1½-2 ton single axle trucks: Chevrolet, Ford, G.M.C., Reo, Studebaker.

Available with Limitation Order Certificate L-158

SEND COUPON

Investigate features and advantages

THORNTON TANDEM CO.
8775-E GRINNELL AVENUE • Plaza 9700
DETROIT 13, MICHIGAN

Make Big Trucks Out of Little Ones with the
THORNTON Four-Rear-Wheel DRIVE

In U. S.: Sold by TRUCKSTELL DISTRIBUTORS
In Canada: H. V. WELLS, LTD., Windsor, Ont.

THORNTON TANDEM CO.
8775-E Grinnell Ave.
Detroit 13, Mich., U.S.A.

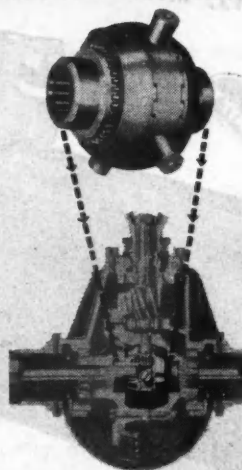
Please send me data on your Automatic-Locking Differential.

Name.....

Address.....

City.....State.....

Make and Model.....Year.....



Rebuilding Water
Pumps—Pressing
in Bushings, Im-
pellers, Fan Hubs



Typical of service offered today by T. P. Jobbers, the Standard Auto Parts, St. Louis, Mo., during the war emergency, has added many services for the salvaging and reconditioning of many parts essential to automotive maintenance.



Adjusting Clutch Pressure Plates and
Rebuilding Clutch Assemblies



Rebuilding Carburetors and Fuel Pumps

*Keeping Precious
Automotive Parts
Off The Scrap Pile*

● Thompson Products jobber machine shops all over the country are showing remarkable ingenuity in meeting shortages of replacement parts and lack of skilled mechanics. Women have been trained and are doing excellent work, particularly on jobs requiring fast, accurate assembly. In many of these Thompson jobber shops, badly worn parts which ordinarily would be scrapped, are being built up by metalizing and accurately machined for efficient service.

THOMPSON PRODUCTS, INC. • Cleveland, Detroit, Los Angeles

*ARE YOU TAKING FULL ADVAN-
TAGE OF YOUR THOMPSON
JOBBER'S MACHINE SHOP SERVICE?*

See Your

Thompson



Products

Jobber



ODT Brings Operators Up to Date on Records

Operators of commercial motor vehicles are required to keep records of the operation of all vehicles covered by certificates of war necessity although they may use simplified forms of their own, according to the ODT.

While the ODT feels that records of miles traveled, motor fuel used and tire inspections made are more necessary today than ever before, such records may be kept on forms suitable to the convenience of the operators it was explained.

Forms 17 and 17-a, formerly required by the ODT for reports of operations and tire inspections, have been canceled and will no longer be supplied. Operators still having a supply of these forms, however, may continue to use them, the ODT said. All records will be subject to periodic inspections by ODT officials.

Information required of operators in keeping records of vehicle operations include a record of tire inspection for each vehicle; date of inspection; inspection station number, county and State; serial number or brand of tires requiring service and description of the required tire or vehicle services; certification of inspector that no service is necessary, or certification that such service as was required has been performed.

Tires must be inspected at the end of 5,000 miles of operation or at the end of six months, whichever comes first, the ODT said.

With certain exceptions, a record of loads transported is required to be kept for each vehicle. Certificate holders engaged in nondistributive operations are required to keep such records only in respect of loads transported in over-the-road operations.

Generally speaking, the ODT pointed out, certificate holders are not required to keep a record of loads transported in vehicles engaged in (1) retail distribution service (other than tank vehicles); (2) construction operations; (3) maintenance or repair services; (4) transportation of property wholly within the boundaries of any property under common carrier control or management or between such properties when not separated by more than one mile; (5) public health, safety or public utility service; and (6) farming or the trans-

(TURN TO PAGE 166, PLEASE)

WATERPROOFS *and* INSULATES ELECTRICAL SYSTEMS

IGNITION SEAL provides positive protection against dampness, water, oil, acid and grease.

IGNITION SEAL keeps batteries, distributors, wires, spark plugs, radios and all other electrical system equipment at top efficiency at all times and in all seasons.

Each bottle of IGNITION SEAL is equipped with a brush for ready application. Packaged in one ounce and four ounce bottles.



Use TITE SEAL Gasket and Joint Sealing Compound to prevent leaks of liquids, gases and power. Vibration proof and non-hardening.

SOLD BY YOUR AUTOMOTIVE JOBBER

RADIATOR SPECIALTY COMPANY

CHARLOTTE 1, NORTH CAROLINA

Branches • LOS ANGELES 1, CALIFORNIA • TORONTO 2, CANADA



"PREST-O-LITES Stand up longer...

THAN ANY OTHER BATTERY WE EVER USED

THE
BATTERY
WITH A

KICK



"We have used Prest-O-lite Batteries since 1940," says a letter from Mrs. Natt's Bakery, Miami, Florida. "Our trucks average from 50 to 75 stops and starts per day, which is extremely hard on a battery. Prest-O-lites stand up longer and have shown us lower cost per mile than any other we have ever used. Just recently one of our trucks was driven some seventy thousand miles without a change of battery, either for recharge, or replacement."

Mr. Natt's unusual requirements show you how Prest-O-lite Batteries stand up in tough service . . . can help keep costs down in your fleet. Install Prest-O-lites for low cost, long life.

Ask your dealer or write to

PREST-O-LITE BATTERY COMPANY, INC.
INDIANAPOLIS, 6 INDIANA

Manufacturing Plants at:

Niagara Falls • Indianapolis • Atlanta • Oakland • Oklahoma City • Toronto

*Replace
with*

prest-o-lite

A GREAT NAME...A GREAT BATTERY

ODT NEWS

(CONTINUED FROM PAGE 164)

portation of farm products or supplies (not including for-hire vehicles).

Every certificate holder who operates a property-carrying vehicle is required to keep a record for each vehicle of the number of days the vehicle was idle with the reasons therefor, the ODT explained.

Some classes of operators, such as

local and over-the-road common carriers, and petroleum tank truck operators, are presently required by the ODT to file a monthly operating report. The forms for these reports are mailed directly to the operators by the ODT and are required to be filled out and returned by the fifteenth of the month following the month indicated on the face of the form.

Roddewig ODT Counsel

Clair M. Roddewig has been appointed general counsel of the Office

of Defense Transportation. Mr. Roddewig succeeds as general counsel Jack Garrett Scott, who resigned April 6, 1944. Frank Perrin was made assistant general counsel.

Mr. Roddewig practiced law in South Dakota, was successively Assistant Attorney General and Attorney General of that State, and joined the legal staff of the Interstate Commerce Commission in Minneapolis in 1939, as district field attorney. He came to the ODT in 1942.

Mr. Perrin, before entering government service was employed by the Illinois Central and Nickel Plate railroads. He began work with the ICC in 1939.

New Vehicle Application Changes Made by ODT

A new simplified application form for use in acquiring new commercial motor vehicles, designed to expedite action on applications and to reduce the information required from motor vehicle operators is in use by the ODT.

These forms (ODT-663) replace the old application form (WPB-663). ODT prefers that the new forms be used to speed up action on applications.

On all applications for light and medium trucks or truck-tractors (below 16,000 pounds gross vehicle weight), with the exception of bus chassis, it will not be necessary for applicants to show the make or model designation on the application forms, although they may do so if they desire. However, it will be necessary to show the gross vehicle weight of the truck or truck-tractor which the applicant desires to acquire.

It will not be necessary to show the make or model designation on trailer applications, with the exception of tank trailers; but it will be necessary to show the carrying capacity of the trailer applied for.

All certificates of transfer issued for light or medium trucks or truck-tractors, with the exception of bus chassis, and trailers, with the exception of tank trailers, will be applicable to any make available. On all applications for trucks or truck-tractors over 16,000 pounds gross vehicle weight it will be necessary to show the make, model, gross vehicle weight, etc., and certificates of transfer. (TURN TO PAGE 168, PLEASE)



**Little Things
that do
A BIG
JOB**

**MOTOR
STANDARD
PRODUCTS**

BLUE STREAK

**STARTING
LIGHTING
AND
IGNITION
PARTS**

**STANDARD MOTOR
PRODUCTS, INC.**

37-46 Northern Blvd., Long Island City 1, N. Y.

THE devastating fire power, maneuverability and climbing rate of the Corsair make it the terror of all Jap Zeros. For economy of deck space on ships, the wings fold back on hinges. Strong hinges, you may be sure, to stand the terrific stress of 400 miles an hour and better. "Little things that do a big job."

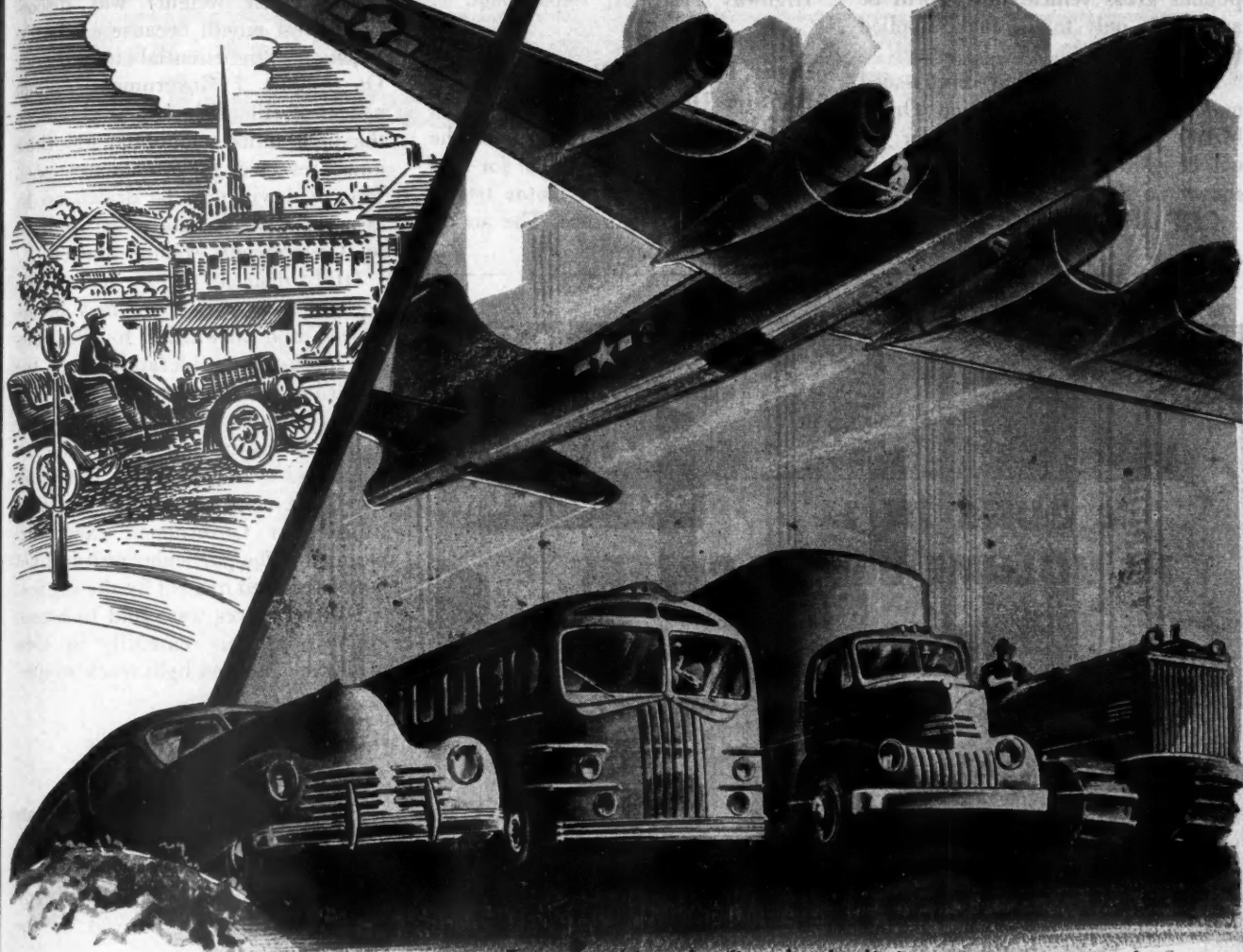
In a motor vehicle a "little thing that does a big job" is the ignition coil. The flow of current is the life blood of the car. If the coil goes bad the current ceases and the motor stops dead.

Today, with millions of motor vehicles tied in with the war effort, uninterrupted coil operation is more than "desirable"—it is a vital necessity.

"Good" coils are not good enough under wartime conditions. You owe it to your customers to make replacements with coils that assure *continuous operation*. For uninterrupted dependable service replace with "Blue Streak"—famous as the coils of "Long-life Peak Performance."

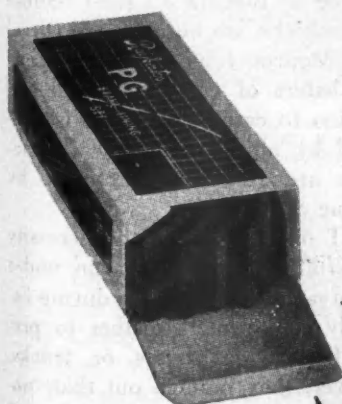
For "Long-Life Peak Performance" use Blue Streak Ignition Parts

THIS IS PROGRESS



From making the first brake lining to stop a car going backward, to production of a brake block to stop a 30 ton bomber, Raybestos has kept progressively ahead — winning universal consumer acceptance by assuring the exactly right friction material for every make, model and job. ★ Tomorrow the application to civilian use of Raybestos' war-born advanced friction materials, such as the remarkable "1492" bomber brake block, will provide you with still finer brake linings and clutch facings. ★ It pays in dollars and cents to make Raybestos your choice.

THE RAYBESTOS DIVISION of Raybestos-Manhattan, Inc., BRIDGEPORT, CONN.



INVEST IN AMERICA
BUY BONDS



Raybestos
AMERICA'S BIGGEST SELLING
BRAKE LINING



BRAKE LININGS, CLUTCH FACINGS, FAN BELTS, HOSE FOR CARS, TRUCKS, BUSES, TRACTORS ON THE WAR AND CIVILIAN FRONTS

ODT NEWS

(CONTINUED FROM PAGE 166)

fer issued for trucks over 16,000 pounds gross vehicle weight will be applicable only to the make applied for.

All certificates that have been issued under General Conservation Order M-100 or ODT General Order 44 will be valid up to the expiration date shown on the certificate of transfer.

ODT officials believe that the new

application form will greatly expedite action on applications for new vehicles and permit handling in Washington with fewer employees in the Allocation Section of the new Highway Transport Department.

Light Truck Applications Require Dealer Certification

The ODT on Aug. 15 resumed the acceptance of applications for the purchase of new light motor trucks for essential civilian use. The action

is expected to dispose promptly of the smaller number of such vehicles remaining in dealers' stocks.

Acceptance of applications for these trucks (below 9,000 pounds gross vehicle weight) was discontinued last month because of the exhaustion of the essential civilian pool. On August 7 Government exempt agencies relinquished their claims on the light units remaining and these units reverted to a common pool. This pool will now be drawn on by essential civilian users, as well as by Government exempt agencies.

ODT district offices have been notified that applications may be approved and forwarded to Washington for final consideration when the applicant furnishes a letter from a sales agency stating that the specific light truck is in stock and giving the make and serial number. The letter also must state that a certificate of transfer or Government exemption permit for the particular unit has not been presented or held by the agency.

District offices were told to screen applications very carefully in view of the very limited light truck supply.

Public Complains to ODT About Idling Trucks, Buses

Bus and truck drivers who waste gasoline by letting their motors idle while in terminals or on service routes are incurring increased public disfavor, letters received by the ODT indicate.

"ODT has requested that bus and truck drivers cooperate in conserving gasoline by turning off their motors when vehicles are not in use," Director J. Monroe Johnson said. "However, letters of complaints still call attention to cases where fuel is consumed by idling motors, while motorists are restricted in travel by gasoline rationing."

ODT officials realize the necessity for permitting motors to run under certain conditions, such as during extremely cold winter weather to prevent freezing of buses or trucks. However, they pointed out that, under favorable weather conditions and especially during the hot summer months, motors should be shut off on all stops of from one to three minutes or more, depending on the type of equipment and condition of vehicle parts.

(TURN TO PAGE 170, PLEASE)

Revolutionary

NEW GREASE GUN

2 GUNS IN 1

HI VOLUME and HI PRESSURE



Patent Applied For

BISHMAN

NO. 800

DUAL-DUTY GREASE GUN

SAVES TIME. With the ONE gun in your hand, you simply shift a button to get either a big volume of grease or the high pressure you need (up to 15,000 lbs. maximum) to break through clogged or frozen fittings.

CONSERVES ENERGY. Handle more jobs per day with less fatigue. Easy working; comfortable sure grip handle.

MANY NEW IMPROVEMENTS—Exclusive 2-piston operation; pistons ground and fitted; grease-proof, snug-fitting rubber HYDRO-SEAL Follower on loading rod; self-locking POSITIVE CATCH for loading rod. Sturdily built—neat durable cadmium and rust-proof black finish. Acclaimed by service men "the greatest advance in hand grease guns since their invention".

Ask Your Jobber or Use Coupon Below

BISHMAN MFG. CO., 1101 SOUTH 2ND ST., MINNEAPOLIS 15, MINN.

BISHMAN

Established 1926

Hydraulic Tire Spreader

"Quick Action"

Pneumatic Tire Spreader

Battery Jig Filler

Battery Cooler

Battery Box

Battery Hold-down

Tire Rim Tool

Dispensing Pump

BISHMAN MFG. CO.
1101 South 2nd Street
Minneapolis 15, Minnesota

Send me immediately full details on this New Gun.

Name.....

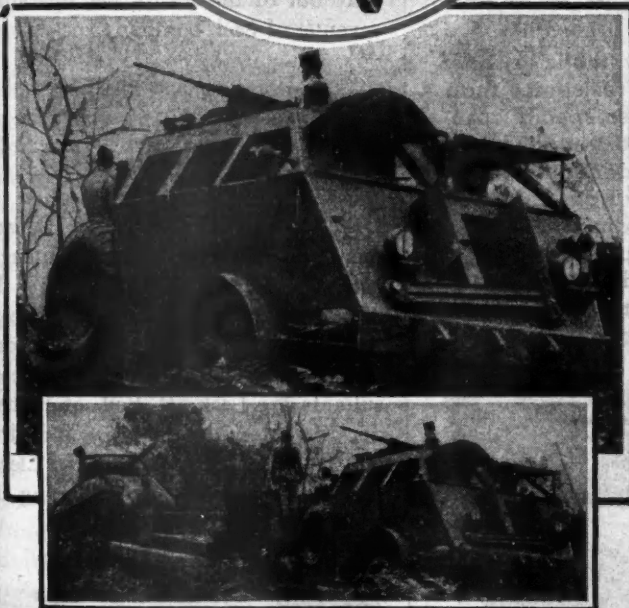
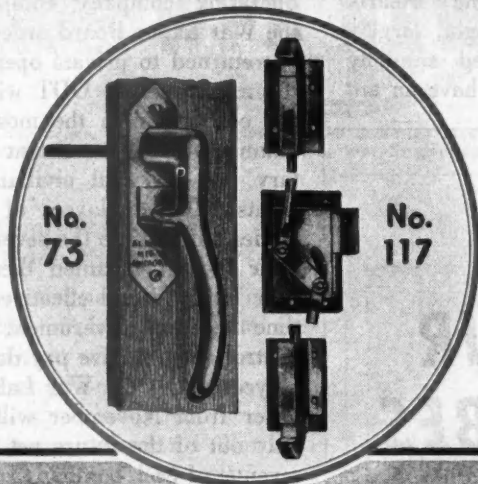
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City..... Zone..... State.....

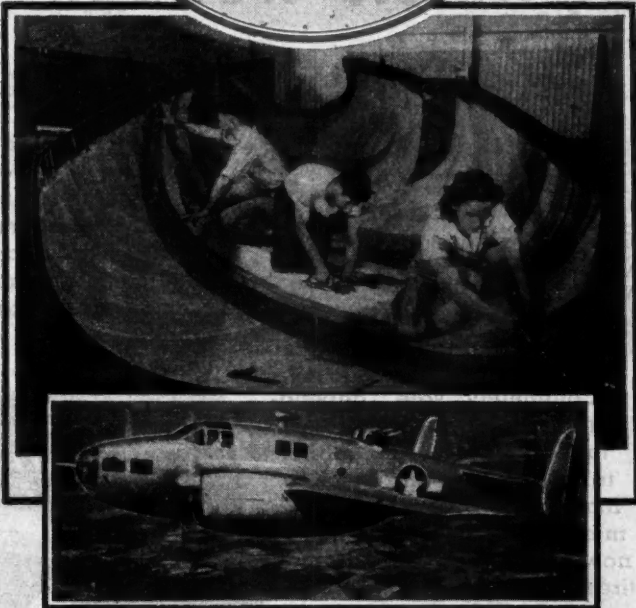
HANSEN

HARDWARE and TACKERS

United in War Effort



Above: Top panel—Tank Recovery Unit, built by Pacific Car and Foundry Co. Equipped with Hansen Locks and Handles (in circle). Lower panel—Tank Recovery Unit retrieving Tank.



Above: Top panel—Fuselage of Trainer-Bomber Plane, made of plywood, being assembled with Hansen one-hand Tackers. Lower panel—Trainer-Bomber built by Fairchild Engine and Airplane Corp.

POWERED with a 300 h. p. Hall-Scott Engine and equipped with Hansen Hardware, the Tank Recovery Unit shown above is doing the unique and necessary job of retrieving a mud-stuck tank. Out in No-Man's Land, where everything is "on its own," dependability, durability, ruggedness and quality are vitally important. You get them in this Hansen-equipped unit. For hard wear use Hansen.

THE facility with which Hansen one-hand Tackers are operated, even by agile-fingered girls — and the speed with which these handy units operate — puts plywood construction of airplanes on a rapid, economical basis. The Fairchild Engine and Airplane Corp. finds Hansen Tackers a quick, efficient method in building Trainer-Bombers. Handy for other tacking and fastening jobs, too.

Write for complete details



A. L. HANSEN MFG. CO.
5047 RAVENSWOOD AVE., CHICAGO 40, ILL.



ODT NEWS

(CONTINUED FROM PAGE 168)

Government Takes Over 103 Strike-Bound Trucking Firms

The ODT took possession and commenced operation of 103 strike-bound midwest trucking firms on Aug. 12 in accordance with an Executive Order issued by President Roosevelt.

Colonel J. Monroe Johnson, ODT Director, appointed Ellis T. Longe-

necker, of the ODT Highway Transport Department as Federal Manager of the companies. Mr. Longenecker set up headquarters in the Metropolitan Life Building, Minneapolis, Minn.

The companies affected by today's action operate in Minnesota, North and South Dakota, Nebraska, Iowa, Kansas, Missouri and in parts of Wisconsin and Oklahoma. Nearly five million tons of freight, largely war material, are hauled annually by the companies which have an an-

nual revenue of approximately fifty million dollars.

The strike was precipitated by the refusal of the trucking companies to put into effect a wage increase ordered by the National War Labor Board last February 7. They claimed they could not absorb the wage increase.

Colonel Johnson said that as each operating company complied with the War Labor Board order it would be returned to private operation. In the meantime the ODT will operate the companies in the most efficient manner possible consistent with military and essential civilian requirements. The employees of the companies will receive the seven cents an hour increase granted them by the War Labor Board effective from the time Federal government assumes control. Retroactive pay due the employees under the War Labor Board order from November will be paid only out of the future net operating revenue of each company.

Take Care WHEN YOU REPAIR Synthetic RUBBER TUBES



Because synthetic rubber has less tear resistance than natural rubber, special care is required to repair injuries. To permanently prevent the injury from enlarging and spreading beyond the repair, proper preparation, fill-in, and vulcanization are a vital necessity in every repair job.

Completely safe, dependable repairs in either synthetic or natural rubber tubes are easy and quick to make with Dillelectric equipment. This proven method, now used by thousands of tire repair men, provides the simple, inexpensive means to "safety-sure" all your tube repair work.



Write, now, for the Dillelectric Instruction Manual which pictures and describes in detail the proper preparation and vulcanization of synthetic tubes.

THE DILL MANUFACTURING COMPANY
700 EAST 82nd ST. • CLEVELAND 8, OHIO

DILLELECTRIC
REG. U. S. PAT. OFF.
Electrically **VULCANIZED**
TUBE REPAIRS



INSTRUCTION
MANUAL *Free*
ON REQUEST

Bell and Strasshofer Industry Consultants to ODT

The Private Carrier Section of ODT's Highway Transport Department, pursuant to its newly inaugurated program, has announced the appointment of two industry consultants for the laundry and dry cleaning industries. The new consultants are Leslie B. Bell, of Bethesda, Md., for the laundry industry, and Roland H. Strasshofer, of Cleveland, Ohio, for the dry cleaning industry.



Here is a 20-ton smoke stack, 24 ft. wide and 18 ft. high, on the way to the Philadelphia Navy Yard from Allentown, Pa., a distance of 60 miles. The giant stack was hauled by a White Super Power tractor and heavy drop-frame semi-trailer.



Copies of any order, regulation, amendment and directive mentioned in this department may be procured from the Office of Information, War Production Board, Washington, D. C.

L-158 Replacement Parts Order Expanded

To increase production of certain automobile replacement parts that still remain in critically short supply, Limitation Order L-158 has been amended to provide greater flexibility in their manufacture, the War Production Board reported today.

Officials of the Automotive Division said the changes reflect recommendations of the Replacement Parts Industry Advisory Committee. Not all the recommendations could be adopted, however, because of the continued shortage of certain materials and labor, the officials said.

Returning war veterans will be aided in establishing, or re-establishing themselves in the small combined service and gasoline station business by an amendment adopted today.

Under the old order, persons seeking quantities of repair parts for resale were required to take an appeal from the inventory provisions of the order. As amended, the order permits anyone to go into the business of distributing replacement parts by acquiring up to \$1,000 worth of parts as an initial inventory. Having once established himself in the business, however, he would thereafter be subject to the inventory limitations of the order.

Provisions incorporated into the order several months ago to permit a 5 per cent "set aside" of plant facilities also are broadened. This applies to production only of the following parts, which are in short supply: engine components, clutches, transmissions, propeller shafts and universal joints, axles, braking systems, wheels, springs, steering apparatus, cooling systems, fuel systems and electrical systems, includ-

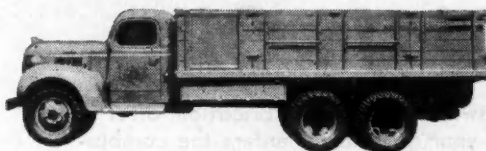
ing generators, starters and motors.

When such production will not interfere with any "frozen" schedule for the war program, the amendment permits any producer of parts for original equipment or replacement to use in any month for the production of the parts listed on Schedule I, 5 per cent of his total man or machine-hours, or both, that were devoted during the preceding month to the production of automotive parts for original equipment and replacement.

(TURN TO PAGE 174, PLEASE)

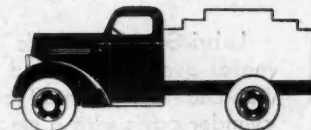
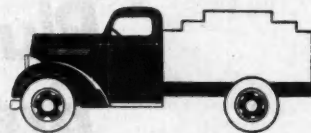
Haul More in '44 THE THORNTON WAY MAKE YOUR 1½-2 Ton MEDIUM TRUCK DO WORK OF TWO

Flash: WPB has now removed all rationing restrictions from Third Axle Conversions



THIS

1 Heavy Duty Truck
1 Driver (does work of two)
1 Wage



NOT THIS

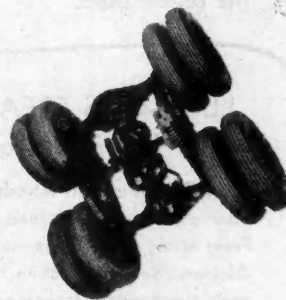
2 Medium Trucks
2 Drivers
2 Wages

THORNTON GIVES 100% MORE TRACTIVE EFFORT...100% MORE PAYLOAD CAPACITY

Whether your business is mining, logging, lumbering, oil production, hauling, construction work, etc., you face the need of more heavy duty trucks. *Where can you get them? Here is the solution:* If you own a new or used 1½-2 ton medium, we can convert it into a rugged, powerful, 6-wheel heavy duty truck capable of hauling 100% more payload through dirt, sand, mud, snow and up steeper grades.

We can prove savings in manpower . . . investment . . . operation . . . upkeep.

You need this heavy duty conversion. Place your order with Thornton today. Make more money with one truck.



This is the Thornton Drive, consisting of two driving axles, two-speed gear case assembly, "walking beam" type springs; wheels; tires.

THORNTON TANDEM CO.

8735-B GRINNELL AVENUE • Plaza 9700
DETROIT 13, MICHIGAN, U.S.A.

Investigate THORNTON Automatic-Locking
DIFFERENTIAL for Replacement in Truck Axles

In Canada see: H. V. WELLES, LTD., Windsor

Thornton Tandem Co.
8735-B Grinnell Avenue
Detroit 13, Michigan, U.S.A.

Please send me catalog of facts on changing my 1½-ton truck into a heavy duty truck.

Name _____
Address _____
City _____ State _____
Make of Truck _____ Year _____
Used for _____

WPB NEWS

(CONTINUED FROM PAGE 173)

without restriction as to their use and without regard to Priorities and Controlled Materials Plan Regulations.

Thus a gear manufacturer who is abreast of his military requirements will be able to fill orders for gears up to the 5 per cent ceiling, regardless of whether they are for passenger cars or trucks, scheduling them solely on the basis of the need as he sees

it and without regard to preference ratings assigned to other production or to the seniority of other orders.

The 5 per cent "set aside" provisions waiving Priorities and Controlled Materials Plan regulations are also extended for the first time to plants producing components of replacement parts. Component manufacturers, as distinguished from parts producers, are given the same 5 per cent authorization for the production of automotive type components for the parts already listed. They are

also authorized to ship each month against orders for replacement parts producers up to 5 per cent of their total monthly production of automotive type components.

The amendments permit manufacture up to the 5 per cent ceiling only where the production will not interfere with the delivery of orders for the armed services. It is pointed out, however, that there is no intention to limit the production of replacement parts to 5 per cent of the facilities where additional facilities beyond the 5 per cent limitation are actually available within the plant and can be used without interfering with the delivery of armed service orders.

By another amendment operators of taxicab fleets are now included with truck and bus fleet operators in the special provision for parts for fleet operations. In addition, radiators, clutch assemblies and front axle assemblies are added to the list of parts that a fleet operator may acquire without turn-in.

The list of parts that any consumer may acquire without turning in the old part, in order to improve the efficiency, capacity or usefulness of the vehicle, also has been expanded. The additions include such parts as governors, shims, piston and piston ring expanders for all vehicles; and front wheel drive, conversion units and attachment third axles for medium and heavy trucks, truck trailers, passenger carriers, off-the-highway motor vehicle and motorized fire and police equipment.

PREMIUM QUALITY GASOLINE

Plus a Perfect Break-In Oil

Lubri-Gas is today's answer for proper lubrication after a motor overhaul. Added to your gasoline, it enters the combustion chamber as an oil fog which condenses and bathes all upper cylinder parts with a clean oil film.

Lubri-Gas puts your new and newly overhauled motors "in the groove." Its continued use helps to prevent carbon, reduces friction, increases fuel mileage and adds pep to all motors. Lubri-Gas keeps your cars and trucks on the road and out of the repair shop.

LUBRI-GAS TREATED GASOLINE Cleans and Lubricates as It Powers the Motor

Lubri-Gas treatment introduces a carbon and sludge dissolving lubricant as a clean unburned oil fog—with the fuel. Improves ignition. Frees sticky valves. Increases compression. Prevents blow-by and oil dilution. Reduces friction between piston rings, piston, cylinder. Prevents overheating. Increases power, SAVES WEAR, REPAIR, GAS, OIL.

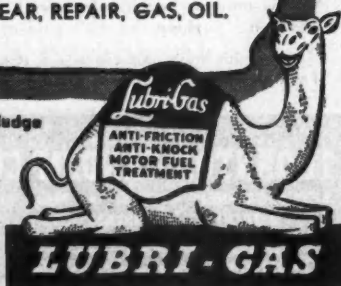
• Anti-Friction • Anti-Knock • Anti-Carbon • Anti-Sludge

LUBRI-GAS

221 N. LaSalle St., Chicago 1, Ill.

AMONG TODAY'S USERS OF LUBRI-GAS

International Harvester Co., Rock Island, Ill. Rock Island Arsenal, Rock Island, Ill. Stone & Webster Construction Co., Knoxville, Tenn. Cassman & Norman, Madison, Wis. State and County Highway divisions of: Illinois, Ohio, Indiana, Texas, Montana, Kansas, Iowa. Yellow Cab Company, Louisville, Kentucky. Memphis Army Services Forces and various U. S. Army Engineers and other U. S. Army divisions. Norwalk Truck Lines, Norwalk, Ohio. Schutze Baking Company, Chicago, Illinois. Keeslin Motor Express Co. and Huber and Huber Motor Express.



Registered Trademark

Get the facts, today!
Write, wire or telephone
LUBRI-GAS

221 No. La Salle St., Chicago 1, Ill.

No Increase Seen in Mechanics' Hand Tools

Mechanics' hand service tools will not be available to the general public, above present flow levels in consumer channels, until requirements of the armed services are satisfied, according to the Tools Division of the WPB in releasing figures on shipments and new and unfilled orders for the first half of 1944.

Mechanics' hand service tools include pliers, wrenches, ball peen hammers screwdrivers, etc. Woodworking tools, edge tools, and such heavy-forged tools as sledges, picks, crowbars, etc., are excluded from the list of hand service tools, the division pointed out.

RUGGED

Built to 'take it' when the going is toughest

The march to Victory is becoming a reality only because myriads of rugged spark plugs kindle everlastingly throbbing power and movement in the engines of war. After months of ceaseless service, rugged BLUE CROWN Spark Plugs still fire the motors of transport and combat. On the beaches of Normandy, over the mountains of Italy, across the sands of Africa, only the rugged can prevail.

BLUE CROWNS . . . built for rugged relentless service wherever the Nation calls, whether at home or abroad, can stand up and "take it" when the going is toughest. They are precise, efficient, dependable . . . and above all, RUGGED.

Ask Your Jobber



PAT.
PEND.

BLUE CROWN



HUSKY

**Controlled Heat Zone
SPARK PLUGS**



A BLUE CROWN FOR EVERY PURPOSE IN PEACE AND WAR

DOMESTIC SALES

Blue Crown Spark Plug Co.

A DIVISION OF MOTOR MASTER PRODUCTS CORP.
CHICAGO 40, ILLINOIS • U. S. A.

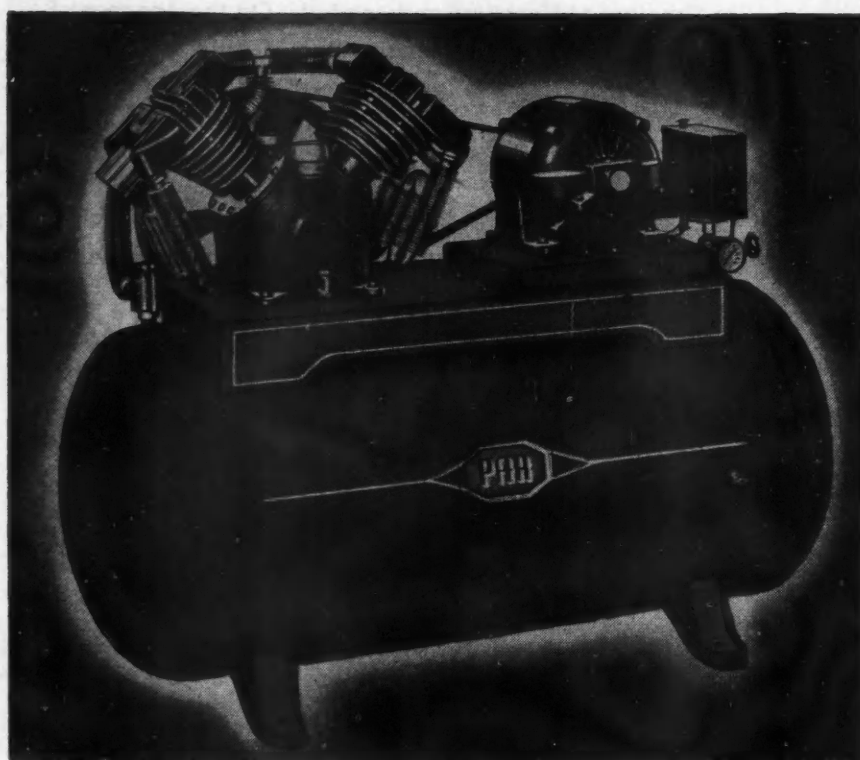
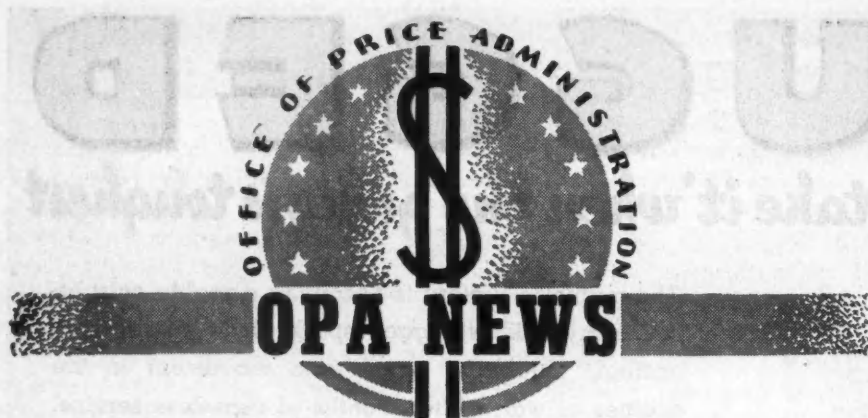


EXPORT SALES

Borg-Warner International Corp.

Cable Address "BORINTCO"
CHICAGO 4, ILLINOIS • U. S. A.





PAR MODEL 30

- A natural for stations and shops operating a multiple of pneumatical equipment.
- A Heavy Duty 3 H.P. two stage 4 cylinder compressor equipped with 80 gal. tank.
- Also available in 5 H.P. model.
- Write for Illustrated brochure of details.
- BY COMPARISON—YOU'LL BUY PAR.

PAR DIVISION

LYNCH MANUFACTURING CORPORATION
DEFIANCE, OHIO, U. S. A.

Tire Certificates Issued Prior to July 15 Cancelled

All outstanding tire ration certificates dated July 15 or earlier for truck and bus tires size 8.25 and larger have been cancelled by the OPA.

Approximately 100,000 such certificates, some issued as far back as April of this year, are affected by the cancellation. All certificates dated July 15 or earlier are invalid, whether in the hands of consumers, dealers or manufacturers. Dealers may not deliver tires to consumers in exchange for the certificates and manufacturers may not deliver to dealers.

"The critical shortage of larger size truck and bus tires," the OPA said, "makes this drastic action necessary. No other course is open to us. These large size tires are so scarce that there are not enough even to meet the most essential needs. By invalidating the older certificates we make sure that present low stocks are drawn on only to fill the needs of applicants at the top of the essentiality list."

Certificates for smaller size truck tires (7.50 and under) and for passenger car tires are not affected.

Truck and bus operators who hold tire ration certificates dated earlier than July 15 must reapply to their War Price and Rationing Board for tires on the same basis as an applicant who had not previously been granted a certificate.

Beginning August 1, applications for tires are being considered against a priority list furnished by the War Production Board.

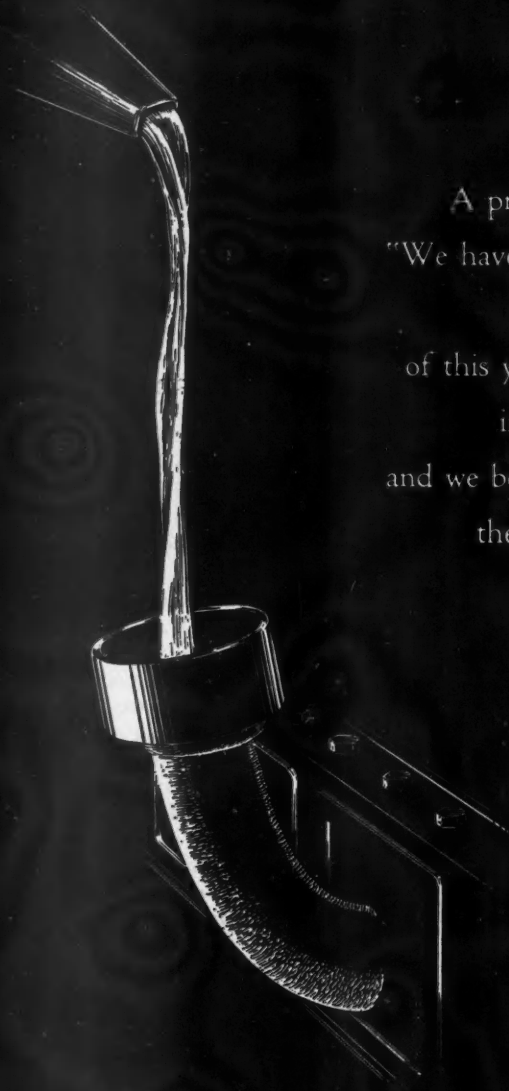
Applicants will continue to apply to the same local War Price and Rationing Boards as heretofore. But since the new, much-reduced quotas are not large enough to provide each local board with a quota, special emergency tire panels, staffed by representatives from several existing local board tire panels, and assisted by OPA tire specialists and Office of Defense Transportation representatives, will pass on the applications and will issue certificates.

These consolidated panels are instructed to exercise the greatest care in granting heavy duty truck and bus tires, using the WPB essentiality list as a guide.

On the issuance of smaller size
(TURN TO PAGE 178, PLEASE)

EXAMPLE OF

Service :



A prominent St. Louis contractor writes:

"We have been using your products for
several years with good results. The first
of this year we also began using your oils
in our trucks and Caterpillar tractors
and we believe Cities Service lubricants are
the best we have ever used in our
equipment . . ."

More and more, it's service that counts . . .

and *Cities Service* means good service!



CITIES SERVICE OIL COMPANY

ARKANSAS FUEL OIL COMPANY

OPA NEWS

(CONTINUED FROM PAGE 176)

truck tires, and passenger car tires, local boards will operate as heretofore, receiving applications and issuing certificates.

Gasoline Repriced

Refiners' maximum prices on a new 70-74 octane ASTM grade of gasoline have been established by

the OPA. These maximums are set at one-eighth of a cent below the applicable maximum price in effect on 72-74 octane ASTM gasoline at each shipping or delivery point.

There will be no change in tank wagon ceilings or at retail.

14,466 Trailers Slated for First Half of 1945

The trailer program for the first half of 1945 established by the WPB calls for the construction of 14,466

trailers, of which 11,248 will be general freights, 263 lowbeds, 1,570 poles, 130 milk tanks, 625 petroleum tanks, 375 off highway and 255 miscellaneous.

The general freight trailers to be produced under the allocations announced today will be for the Office of Defense Transportation, Canada (civilian), Foreign Economic Administration and Maritime Commission.

A.M.A. Opposes Integrated Transportation

Calling for a continuation of the present effective competitive system of transportation, the Traffic Committee and the Board of Directors of the Automobile Manufacturers Association, have taken a stand of decided opposition to the integration program of the Transportation Association of America which advocates the creation of a limited number of transportation companies to operate and furnish all types of transportation facilities and services, according to a statement released by George Romney, A.M.A. general manager.

"It is very doubtful that the public interest or that of transportation would be served by giving up a seasoned system of competition which is virtually free from public complaint by substituting an entirely untried plan.

"Instead of being a stop-gap to government ownership and a means of preserving the competitive enterprise system, revolutionary integration of transportation might be the opening wedge to bring it about," the committee and the board stated.

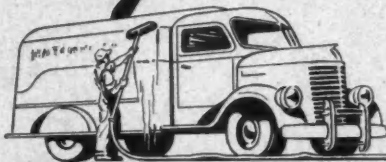
Resin Replaces Rubber In Brake Linings

Battle-tested for millions of miles on world fighting fronts, a revolutionary new asbestos and synthetic resin brake lining promises to do away with smoking brakes.

Because of military needs, the improved brake lining will not be available for general commercial use until after the war; but it is getting rugged roadwork on nearly a million jeeps and other types of military vehicles, Frederic Weyburne, general manager of Marshall-Eclipse Division of Bendix Aviation Corp., revealed.

SPEED WASH FOUNTAIN BRUSH

*Cuts Washing Time
in Half*



Washing trucks and trailers with Speed Wash gets amazing results with little effort and great speed. Clean, fresh water feeds right through the handle and tufts, so that each 12 inch stroke does a complete job of soaking, scrubbing and rinsing. There's no waste motion changing tools and back-tracking over the same surface. You can see how this easily cuts washing work and time in half, does a better job, and also saves the finish.

FULLY GUARANTEED

Put Speed Wash to work on your trucks. If it doesn't measure up to your expectations, return it for a full refund of your money. Order on this liberal basis today. Extend your priority of AA-5 or better, to insure prompt shipment. Make out your check or money order to Milwaukee Dustless Brush Co.

9⁴⁵
post paid if
check accom-
panies order.

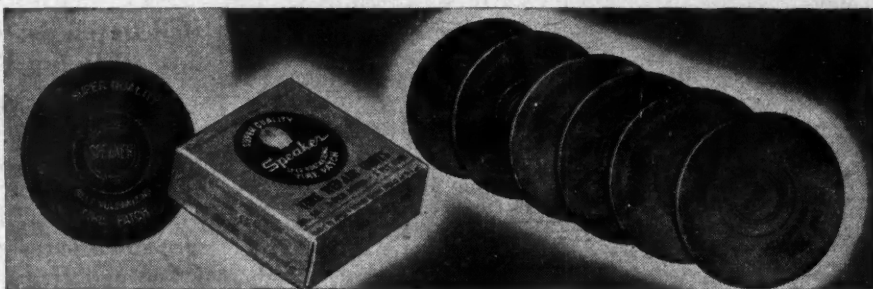


"Dustless"—"Speed Sweep"—"Speed Wash"—brushes

Milwaukee Dustless
BRUSH COMPANY

526 NORTH 22nd STREET, MILWAUKEE 3, WISCONSIN

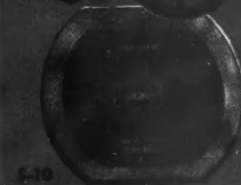
No. S5 Speaker
Super-Quality
Tire Repair
Units... six in
package. Other
sizes: 7", Side-
wall, 7", 9",
8 1/2 x 11" and
10 x 12"... all
packaged for
protection.



Speaker "Super
Quality" Tire
Repair Units



55-5" Round



10x12"
Truck
Size

Speaker "Match Patch"
Tube Vulcanizing Units

No. R-50 "Match Patch" Ser-
vice Station Group Package



"4-Way
Sealed"

"GU" Giant Universal
"Match Patch"



For
Large
Repairs

Speaker "Match Patch"
Complete Vulcanizing Outfits

For Repair Shops and Garages



More Important Than Ever... All
Tube Repairs **MUST** be Vulcanized!

THE *Leading AND Complete*
LINE OF **SAFETY VULCAN-
IZING TUBE and TIRE-REPAIR**

Safe Tire Repairs...

ANY TIME, ANYWHERE
with NEW SPEAKER "SHOP-and-ROAD"
Packages of "Super Quality" Tire Repairs

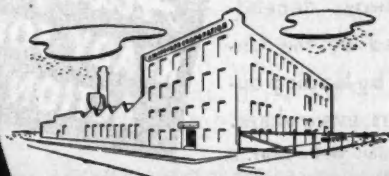
In your repair shop, or for emergency repairs on the road, the new Speaker "Super Quality" Self-Vulcanizing Tire Repairs are "tops" ... ready NOW to help you lick the serious tire shortage problem. Not only are they the best tire repair, but also are packaged best, for protection right up to time of use, and for convenience in handling and storing.

These are more than mere "blow-out shoes" for casings! "Built like a tire," with tough, crisscross cord construction, FlexForm molded "feather edge," cushion-gum laminated for automatic self-vulcanizing by road heat, SPEAKER "Super Quality" Tire Repairs are adding thousands of extra miles to tires that would have "given up" long ago.

Anyone can apply them, any time, anywhere... in shop or alongside the road... no special equipment required... they won't shift, slip, buckle, or cause undue wear on tube.

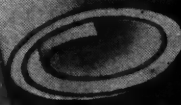
SPEAK TO YOUR JOBBER about SPEAKER!

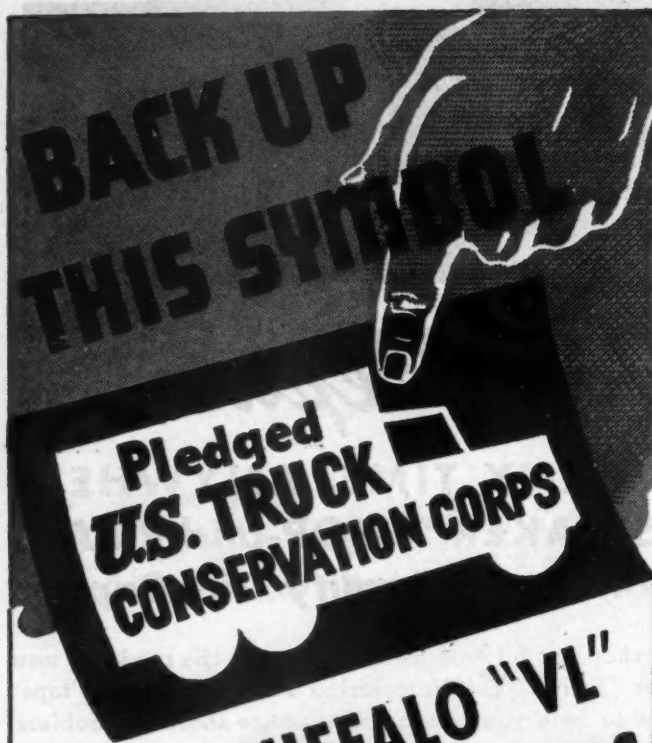
Speaker jobbers are serving thousands of fleet owners with "SUPER QUALITY" Tire Repair Units, including the large truck sizes (8 1/2 x 11" and 10 x 12" units)... and with Speaker "MATCH PATCH" Tube Vulcanizing Units and Equipment. Now, more than ever, Speaker units are needed for crude as well as synthetic tire and tube repairs... to conserve rubber and increase tire mileage. Order from your nearest jobber, now.



**J.W. SPEAKER
CORPORATION**

3059 NORTH WEIL STREET
MILWAUKEE 12, WISCONSIN





With BUFFALO "VL" FIRE EXTINGUISHERS

● The most rigid program of mechanical care to conserve your rolling stock can be defeated in a matter of minutes—by FIRE! Be prepared for the fire hazard with Buffalo "VL" Extinguishers built for quick, effective action in combating all types of flames. These husky extinguishers are constructed to withstand highway jolts—the wear and tear of daily driving. They're ready for action the instant fire strikes. Easy to operate—always dependable. Approved by the Underwriters. Sold by leading automotive jobbers everywhere.

Free descriptive folder. Write Dept. E.



*Always
READY FOR
ACTION*

BUFFALO FIRE APPLIANCE CORP.

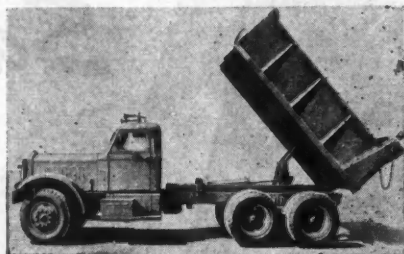
BUFFALO 2, NEW YORK
EST. 1895

BUFFALO
Better Built
FIRE EXTINGUISHERS

Heil Develops New Twin Arm Hoists For All Dump Trucks

Another development to come out of the war is the standardization of a line of new twin arm hydraulic hoists suitable for all makes of trucks and trailers and all styles of bodies by The Heil Co., Milwaukee. Formerly, there was a vast assortment of styles and sizes of hoists for specialized purposes.

The new Heil hoists have been greatly simplified and save over 300 lb. of dead weight on an 1800-lb. unit. The



new design eliminates heavy castings, many rollers, cams and gears, and permits operators to carry a greater payload on each trip.

Heil Twin Arm Hoists are said to be capable of lifting loads of 24 tons to a 50 deg. dumping angle in 10 to 15 seconds. The operation is smooth and noiseless and the body can be stopped and held at any angle without undue strain on the hoist mechanism. Loads may be dumped efficiently even when the truck chassis frame is twisted because of uneven ground.

Tests indicate that the life of the new Heil Twin Arm Hoist will extend substantially beyond that of the truck chassis upon which it is mounted.

Walter Four Point Positive Drive Tractor

The accompanying illustration shows one of the Walter Four Point Positive Drive Tractor Trucks with 35-ton side dump trailer, one of the several fleets of similar units that



are in use in iron ore hauling operations at various mines on the Mesabi Range in Minnesota.

The tractor is powered with a six-cylinder, 1197 cu. in. engine which develops 300 h.p. on Butane gas fuel. With the combination of this powerful motor, the special tractor type transmission, the suspended double reduction drive with the positive drive to all four wheels, this unit can negotiate eight and 10 per cent grades at speeds of from seven to eight miles per hour. Grades of even 15 and 20 per cent can be negotiated where necessary.

The side dump trailer has the advantage that rocks and other overburden material can be handled to very good advantage. The particular type of trailer shown is the one-way side dump with down-folding side.



NO OTHER TRUCKS LIKE *All-Wheel-Drives* FOR SNOW REMOVAL

Up in New England, where the snow piles seven or eight feet deep in roads and streets—and out in the snow belt of Montana, Idaho, and other North-western states where the drifts frequently stand thirty feet high, multiple drive trucks are prime favorites of snow-removal crews.

In many of these regions, Marmon-Herrington *All-Wheel-Drive* converted Fords have won highest praise for sure-footedness, speed and dependability.

In upper Michigan, Minnesota, Wisconsin, Iowa and the Dakotas, these ground-gripping *All-Wheel-Drive* jobs start at first snow fall and clear more miles of roads, faster, than heavier trucks can do.

Equipped with the latest type rotary or "V" plows, they speed down the highways, throwing the snow far

afield, thus preventing dangerous drifts from forming. If drifts *have* formed, these trucks "eat their way through" at a rapid pace, due to the non-skidding, non-slipping power derived from all four or all six driving wheels.

And then, when the snow is gone, the superior maneuverability and economical operation of these trucks keep them busy the year around in general maintenance and repair work.

We are sorry that our many friends in the road building, road maintenance and snow removal services have had to wait so long for the additional Marmon-Herringtons they want, and badly need. As military demands become less acute, more *All-Wheel-Drives* will be available for these important services.

★ BACK THE ATTACK . . . BUY MORE BONDS ★

MARMON-HERRINGTON

All-Wheel-Drive TRUCKS

MARMON-HERRINGTON CO. Inc. INDIANAPOLIS 7, INDIANA
Cable Address: MARTON

WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 36)

first half program of approximately 44,000.

The ODT got nowhere with its renewed request that some light trucks be scheduled for 1945.

The civilian trailer program for the first half of 1945 was established at 14,000 units.

Application Backlog 5000

The ODT Allocation Section put through all of the reforms sketched in this department last month. In addition it was catching up with the backlog of applications for new trucks that had piled up in Washington. Whereas on July 1 there were 12,000 unprocessed applications, by August 12 the heap had dwindled to 5000. Telegrams from impatient applicants and telephone calls from Congressmen interceding

at the behest of applicants, are the Allocation Section's biggest headaches.

5% Parts Mandatory

As predicted here several months ago the revised L-158 replacement parts order has come out of WPB with a number of new items added to its parts schedules and with the 5 per cent reservation of facilities clause relieved of the qualifying phrases that made it a mockery. In explaining the new 5 per cent provision for the production of critical parts for civilians, the WPB had this to say in a memorandum to other Government agencies: "The 5 per cent clause of the April 12 Amendment proved ineffective and unsatisfactory. The new order corrects the deficiency in that (1) it makes the application of the 5 per cent band mandatory on parts producers (although it is not mandatory on component manufacturers); (2) it removes the limitation that plants must be 95 per cent or more occupied with Class A production, which apparently excluded practically every plant, and (3) the 5 per cent band is now authorized for component manufacturers."

More Cadmium Bearings

Because the Ford company has run into production difficulties with its new copper-silver-lead engine bearing, WPB has been generous by continuing to allot extremely strategic and critical cadmium to other manufacturers of bearings for Ford engines. In Washington it is understood that the production difficulties encountered by Ford are in the final plating process.

Equipment Appeals Pile Up

The ODT has two letters before WPB recommending liberalization of L-270, the automotive shop equipment order. To get certain types of shop equipment it has been necessary for truck operators to file appeals. These appeals have been piling up in the Automotive Division of WPB and nothing is being done about them.

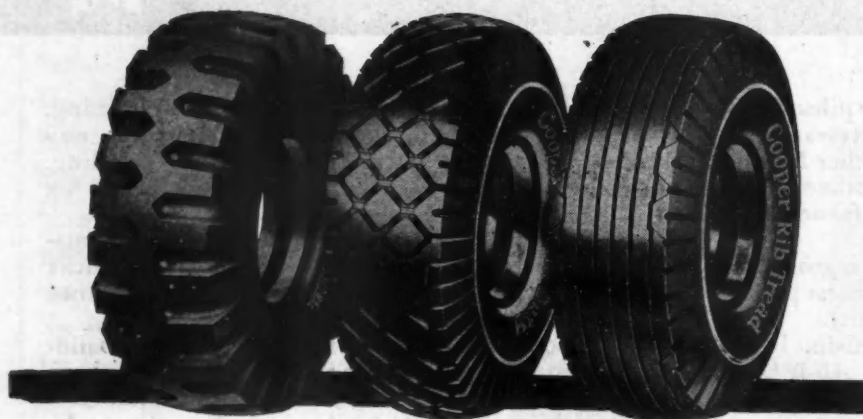
Miscellany

Some of the "trolley-car conductor" executives in the ODT feel they (TURN TO PAGE 184, PLEASE)



faithfully serving at home and abroad

COOPER



NON-DIRECTIONAL
TREAD

ALL-DUTY
TREAD

SUPER-RIB
TREAD

DISTRIBUTED STRESS CONSTRUCTION

TRUCK TIRES

THE COOPER CORPORATION, FINDLAY, OHIO

"CUTS MOTOR WEAR'WAY DOWN!"

Writes Kansas City bus operator



FRAM Saves Motors, Parts, Overhauls!

Mister, we're not just making vague claims when we say that Fram filters save motors, parts, overhauls, dollars and delays! We're giving you straight facts as proven by reports from fleet operators the country over. "200,000 miles before reboring!" says one big transportation company. And a West Coast operator reports, "Wear found to be 3 and 4 times less on motors equipped with Fram filters." Letters like these are proof of how big, heavy-duty Fram filters cut motor trouble and keep fleets on the road. SO . . .

➔ IF YOUR FLEET HAS FILTERS

—get Fram Replacement Cartridges to step up performance. Genuine Fram Chemically-Treated Replacement Cartridges keep oil physically and visibly clean by filtering out dust, dirt, carbon and sludge, while the exclusive Fram chemical treatment impedes the formation of harmful acids and corrosives that eat away motor parts.

➔ IF YOUR FLEET HAS NO FILTERS

—install big, rugged Fram Oil and Motor Cleaners. Here's the iron-clad Fram Guarantee: Install Fram filters on your fleet and operate for 90 days. Then, if you're not convinced that Fram filters save their cost many times over, we'll gladly refund your money. Fair enough? Then get the complete Fram story from your jobber today.

FRAM CORPORATION, Providence 16, R. I.

In Canada: J. C. Adams Co., Ltd., Toronto



FRAM

Oil and Motor Cleaner

WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 182)

are being taken for a ride by the Budget Bureau. From \$4,000-a-year jobs they were promoted as of June 1 to \$8,000 jobs. As late as August 15 they had not received the increase. It irked some of them who had men under them that were getting more than \$4,000. . . . To help out needy operators, truck manufacturers have

turned back 10,000 heavy tires from their inventory. Trailer manufacturers have been cut 33 1/3 per cent on heavy tires.

END

(Please resume your reading on P. 37)

Reo Devotes 236,525 Sq. Ft. to Special Axles and Transmissions

As a major move in speeding up the nation's production of military vehicles, more than 236,525 sq. ft. of

floor space in the plant of Reo Motors, Inc., Lansing, Mich., has been converted to the manufacture of special axles and transmissions.

SOMERVELL PRAISES WAR JOB OF TRUCKS

(CONTINUED FROM PAGE 150)

avoid road congestion, economize on manpower and achieve the greatest load lift with a minimum of trucks.

The fact that actual truck production for the "less difficult first half" of 1944 fell short of schedule by 5,531 light-heavy and 4,596 heavy-heavy trucks was cited by General Somervell in calling for stepped-up production.

That this increase can be accomplished, he said, is shown by the "outstanding job" of the truck industry in the past. In 1942 production was increased 265 per cent and this was again almost doubled in 1943.

"We fully realize the magnificent job that industry has done in tackling this difficult situation and in effecting rapid adjustments in production schedules," he said.

"But a larger job challenges our efforts if we are to get this war over at the earliest possible date and with the minimum loss of American lives," General Somervell concluded.

"E" Awarded to All Perfect Circle Plants

The Perfect Circle Co. employees in the company's four U. S. plants have been awarded the Army-Navy "E" for outstanding achievement in war production. Appropriate individual plant award ceremonies were held on Aug. 4 for the Hagerstown and Richmond, Ind., plants and on Aug. 5 for the Tipton and New Castle, Ind., plants.

New York City Maps Distributed to Fleets

To help fleet operators save gas and tires, 10,000 special maps, illustrating short vehicular routes between Manhattan and Long Island via the Queens Midtown Tunnel, have been prepared by the New York City Tunnel Authority and distributed to commercial and trucking organizations in Brooklyn, Manhattan and Long Island. The maps also show routes via the Queens Midtown Tunnel connecting Long Island with New Jersey.

MARGIN of Victory

The march of important national events has sometimes been determined by the narrowest of margins. For instance, the Constitution of U. S. was ratified by the State of Rhode Island only by the slim margin of TWO VOTES—34 TO 32! But it takes more than a close decision to create a yardstick of preference in Truck and Bus equipment. Such equipment must start—by the WIDEST of margins. No wonder YANKEE leads the field!



Approved

PLASTIC REFLECTORS

Shatterproof! Rugged!
Weatherproof!

Here is the toughest reflector on the roads—made with a reflection power 8 times greater than ordinary tail lamps! When attached, they can be seen 1/4 mile away. Battery drainage is completely eliminated because Yankee Reflectors operate ONLY by the light rays of lamps on other vehicles. They're guaranteed not to warp, crack or lose their reflection qualities. Available in oval or round shapes, with Red or Amber lenses.

MARGIN of Quality

Yankee automotive devices have always had that EXTRA margin of Quality—enough to make them winners and therefore the standard of acceptance. Their rugged "staying qualities" have made them tops at the pay-off.



MARGIN of Safety

Fleet Operators and the "pilots of the road" know the value of a safe haul. Rigidly controlled scientific testing of Yankee Products by Yankee Engineers and then by recognized reputable testing laboratories has always given Yankee merchandise that EXTRA margin of safety so important these wartime days. No wonder the man behind the wheel says "You're safe when you can see or be seen with Yankee Safety Devices."



From ANY angle...
By a WIDE Margin...

it's



FOG LAMPS • MARKER LIGHTS • SIDE-VUE MIRRORS • REFLEX REFLECTORS
STOP LIGHTS • TAIL LIGHTS • DOME LIGHTS • DIRECTIONAL SIGNALS

ASK YOUR JOBBER SALESMAN

YANKEE METAL PRODUCTS CORP., NORWALK, CONN., U. S. A.

**BASIC DESIGN ASSURES STEERING
EXCELLENCE...LONG SERVICE**

GEMMER STEERING

Note the basic design of the Gemmer Steering Gear. An hourglass worm engages gear teeth that roll. Anti-friction bearings are placed at all critical points. Absence of sliding friction provides highest efficiency—easiest transfer of power—easy steering with plenty of power for parking.

Design and construction are also exceptionally sturdy and compact—providing abundant strength, long endurance—ease of installation—saving of weight without sacrifice of overall capacity or steering arm angularity. Alloy steel forgings provide ample safety factor. Internal stresses are low.

A Gemmer Steering Gear will last, and give satisfaction for the life of the vehicle.

Simple:—Just a few parts—nothing complex—nothing to get out of order or require frequent adjustment.

Stable:—No "lost motion"—wear reduced to least possible minimum. Steering is always firm, responsive, positive with absence of rubbery feeling and—wander.

Gemmer Steering is demonstrating its worth in every type of automotive vehicle from the lightest passenger cars to the heaviest buses and trucks—in the road-building machinery, agricultural tractor, and marine fields.

**GEMMER
MANUFACTURING COMPANY**

**6400 MT. ELLIOTT
DETROIT 11, MICH.**

GEMMER...Pioneer of Efficient Steering



Pat. No.
2,280,275—
April 21, 1942

Make your snow plowing **SAFE!**

"BE safe rather than sorry." Equip each plow with KEYSTONE SNOW PLOW LIGHTS.

Ahead and to the rear they flash a big warning in red, blue or amber, STOP. (Letters are 2½ inches high) that instantly attracts attention and can be seen through the swirling snow. These 80 times-per-minute flashes warn in time to avoid accidents. They protect the public—your men—your equipment. They're used by many states, cities, counties, towns, parks and bridges.

**IMMEDIATE DELIVERY
CAN BE MADE**



**KEYSTONE LIGHTS
FLASH TO FRONT & REAR**



AUTO GEAR & PARTS CO.

1446 WEST HUNTING PARK AVENUE, PHILADELPHIA, PA.

FORD CIRCUIT CHANGE FOR BETTER STARTING

(CONTINUED FROM PAGE 53)

everything from the battery. By the time the current gets to the ignition coil, there is quite a drop in voltage; if the lights are on, the drop is much worse. That, also, should be corrected.

A few simple changes in the starter circuit would not only prevent these difficulties but improve operation, reduce maintenance and save fuel. I have designed one such circuit myself and know the idea is entirely practical.

For example, the accompanying wiring diagrams show, Fig. 1, the existing electric circuit as found on our various Ford light delivery trucks and the passenger cars used by sales managers, route supervisors and others. Fig. 2 shows the recommended hook-up change. No one, not even a child, could cause a jammed starter on this circuit.

New Starter Button

The principal change concerns the starter button. By using the type of button indicated in Fig. 2 better starting results because, among other reasons, the resistance coil is momentarily shunted and full 6 volts instead of 3 volts is made available for ignition. Needless to say, this is a big help for snappy starting in cold weather. When the starter button is disengaged, the current returns to its normal flow through the resistance coil at its rated output.

For 11 months this hook-up has been in use on Supplee-Wills-Jones milk trucks which average 350 stops a day, seven days a week and under all seasonal conditions. The results have been beneficial. There have been no unusual burning of points, as the extra voltage occurs only during the brief intervals of starting.

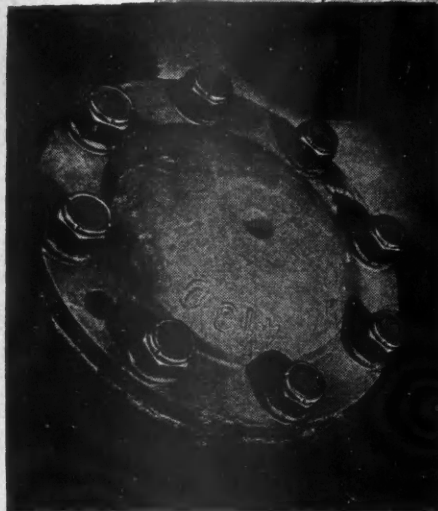
Starter Ground Change

The second change to be noticed in Fig. 2 is that the ground wire was moved from the starting button to the magnetic starter. This avoids poor ground connections caused by paint and rust at the button.

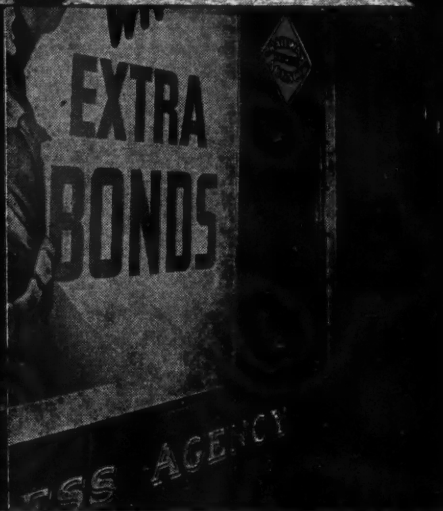
Accessories on Ignition Switch

The final major change deals with
(TURN TO PAGE 188, PLEASE)

HOW TO KEEP 15,000 TRUCKS ON THE GO



These Elastic Stop Nuts are holding the driving flange. Even with frequent starts and stops, and the steady use the wheels of an express truck get, these nuts hold fast.



Railway Express truck bodies are completely fastened with Elastic Stop Nuts. Where other fastenings give with the sway and twist of the truck, these nuts hold tight.



Throughout the chassis, Elastic Stop Nuts are used wherever ordinary nuts loosen in service. Here they are fastening the hand-brake drum on the propeller shaft.

ON the road, trucks earn their keep. In the shop they eat their heads off.

The Railway Express Agency knows that well. And they learned one of the answers to keeping trucks on the go way back in 1927.

They use Elastic Stop Nuts — use them on a great many of their 15,000 trucks.

The reasons? These nuts increase safety and cut down mishaps. They reduce maintenance time and up-keep costs.

Elastic Stop Nuts go on like ordinary nuts. They need no auxiliary locking devices. They can be taken off and put back on time and time again and still lock. Nothing — even severe vibration — shakes them loose.

It's the elastic collar in the top that does the trick. It hugs the bolt threads tight. It cushions vibration. The nut can't shiver loose and turn.

Today billions of these nuts with

the ESNA red collar are being used on our aircraft. A bomber takes as many as 50,000 in a single ship.

In the days to come there will be countless fastening problems on all kinds of products. Perhaps you have one now.

If so, we'd like to talk about it. Our engineers are at your service ready to recommend the right Elastic Stop Nut to provide a safer, surer, trouble-free fastening.

Major spots where Elastic Stop Nuts are at work on Railway Express Agency Trucks

Steering post — fasten bracket to cowl • Steering post — hold bracket to chassis • Drive shaft and universals • Master-brake cylinder to bracket • Hand-brake drum to shaft • Gas tank straps • Propeller shaft center carrier • Clutch and brake pedal brackets • Rear wheel hubs • Motor supports on cross member • Shackle bolt lock pin • Front bumper brackets • Cab bolts • Body hinges • Truck bodies — approximately 375 nuts.



FORD CIRCUIT CHANGE FOR BETTER STARTING

(CONTINUED FROM PAGE 186)

the operation of the heater, directional signal, fan and the other accessories. Almost invariably they remain in operation all along the route. Actually, they are not needed when the vehicle is parked.

By feeding the accessories through the ignition switch in the revised, circuit, all are turned off at one time

and by the one control. After the engine has resumed operation, the accessories start functioning automatically.

The drain on the battery avoided by this body light and accessory operation at the time of starting is considerable—especially in cold weather. The combined load of turn signals and body lights is 84 c.p. Add to this the current required for heater, defroster, etc., and the wonder is that batteries and starters hold up as well as they do.

If a driver were to turn off every operating device and accessory when he stops to make a call, and assuming the truck was out after dark and it was raining or snowing, this is what he would have to make sure was turned off and also some other things he must do.

He would have to make sure:

1. Ignition was turned off.
2. Radio was turned off.
3. Electric wipers were turned off.
4. Turn signals were turned off.
5. Heater was turned off.
6. Electric defroster was turned off.
7. Bright lights were turned off.
8. Dim lights were on.
9. Brake is put on.
10. Gear shift is in neutral.

Thus, the driver should do 10 things to stop and 10 to start again, totalling 20 separate manual operations (if he does them all) at every stop. If he has a hundred stops to make that would be 2000 manual operations in a day's work of a driver, besides loading and unloading the truck.

Of course, many vehicles are not equipped with all of the above listed accessories. Nevertheless, there still are many—far too many—manual operations that require his attention in addition to the proper deliveries he must make. A single switch not only eliminates most of the above mentioned operations but provides greater battery life and an appreciable reduction in maintenance work.

Any fleet mechanic with average automotive electric experience should be able to make the circuit change shown. The time and material will prove to be a good investment—now as well as after the war. Perhaps in the future truck manufacturers will take these matters into consideration and make this extra work unnecessary.

END

(Please resume your reading on P. 54)

Stainless Steel Handbook

A new handbook for designers of stainless steel equipment has been prepared by The American Rolling Mill Co., Middletown, Ohio. "Design Data On High Tensile Stainless Steel Sheets for Structural Purposes" gives valuable information for accurately proportioning stronger, lighter aircraft and other equipment parts.

CLEAN GREASY FLOORS WITHOUT SCRUBBING



with SOL-SPEEDI-DRI!

EVEN a scrubber equipped with razor-blades cannot scrape away grease like SOL-SPEEDI-DRI, the original oil and grease absorbent. For SOL-SPEEDI-DRI actually penetrates, breaks down "build-up" . . . draws old grease-deposits out of wood, concrete, and metal floors. No scrubbing required. Just *spread* SOL-SPEEDI-DRI around all working areas, pits, lifts, and racks. After all oil and grease are absorbed—*sweep* out. Solves the meanest labor-chore in every shop and garage. Floors are brightened, fire-hazards removed, maintenance-costs lowered, shop efficiency increased. Toss your oily wrenches and other tools into a box of SOL-SPEEDI-DRI and, when you want them again, they'll be free from oil. It's more effective than sand in fighting fire. Write on the fly for SOL-SPEEDI-DRI! Request literature and large **FREE SAMPLE**—today!

SUPPLIERS: East—Refiners Lubricating Co., New York 1, New York.

Midwest & South—Waverly Petroleum Products Co., Philadelphia 6, Pa.

West Coast—Waverly Petroleum Products Co., Russ Bldg., San Francisco 4, Calif.

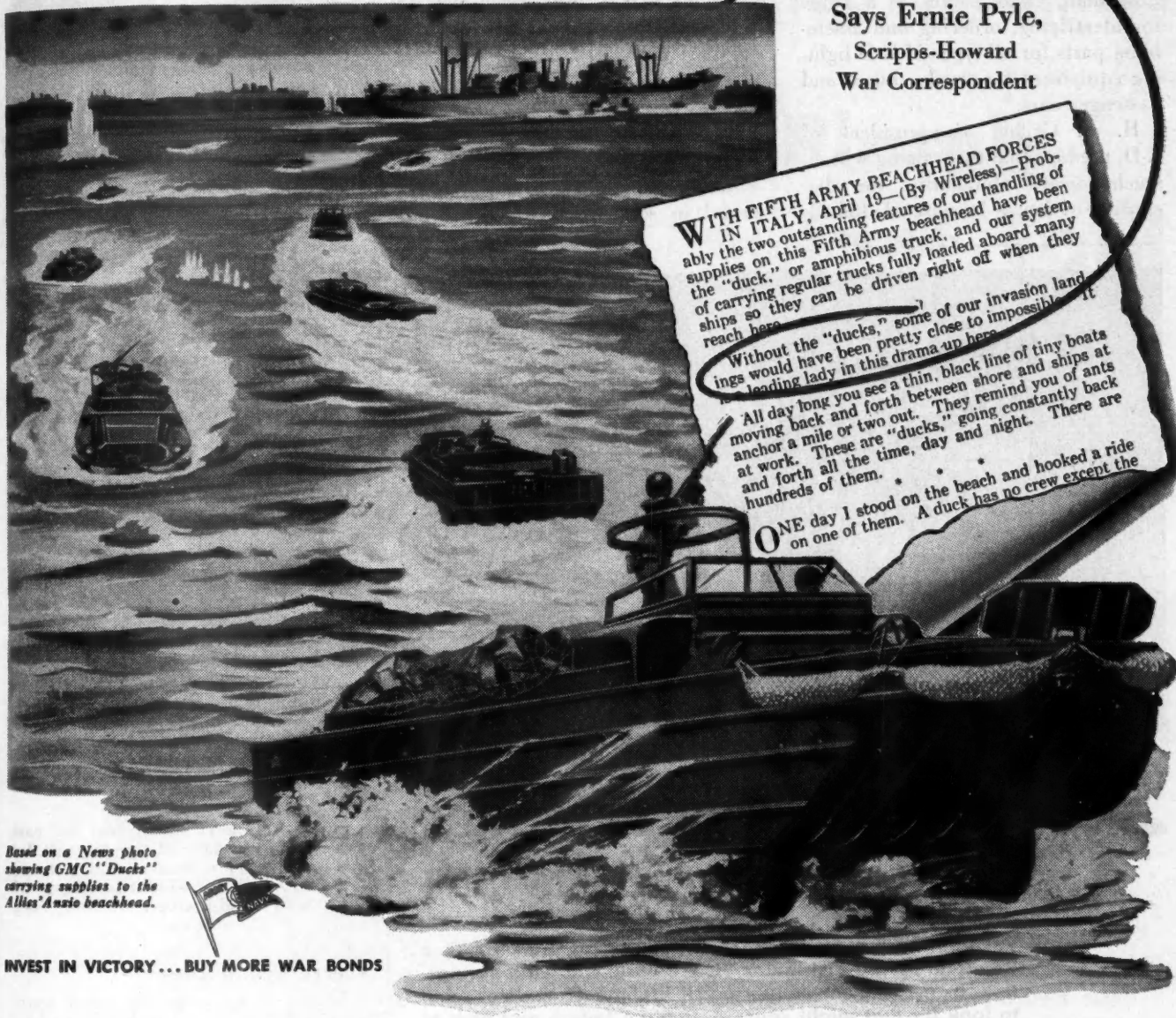
SOL-SPEEDI-DRI
OIL AND GREASE ABSORBENT



THE GMC "DUCK"

LEADING LADY OF ALLIED LANDINGS

Says Ernie Pyle,
Scripps-Howard
War Correspondent



Based on a News photo showing GMC "Ducks" carrying supplies to the Allies' Anzio beachhead.

INVEST IN VICTORY...BUY MORE WAR BONDS

Ernie Pyle, Pulitzer Prize winner for war reporting, is only one of many war correspondents to praise the outstanding performance of the GMC Truck & Coach "Duck."

The "Duck" is a leading Lady of Allied landings because its amazing amphibious ability enables it to perform many tasks that can be duplicated by no other vehicle. It has carried men, munitions and materials from ship to shore to inland fighting areas.

It has charted invasion shores the night before "D" day. It has hauled howitzers from freighter to firing position. It has rescued disabled landing craft. It has blasted enemy beaches with barrages from multi-mounted rocket guns. It has served as a radio broadcaster, ambulance and mobile fueling station.

And in France, this versatile GMC amphibious vehicle again played a leading role in the Allied invasion of Fortress Europe.

WITH FIFTH ARMY BEACHHEAD FORCES IN ITALY, April 19—(By Wireless)—Probably the two outstanding features of our handling of supplies on this Fifth Army beachhead have been the "duck," or amphibious truck, and our system of carrying regular trucks fully loaded aboard many ships so they can be driven right off when they reach here.

Without the "ducks," some of our invasion landings would have been pretty close to impossible. It is a leading lady in this drama up here.

All day long you see a thin, black line of tiny boats moving back and forth between shore and ships at anchor a mile or two out. They remind you of ants at work. These are "ducks," going constantly back and forth all the time, day and night. There are hundreds of them.

ONE day I stood on the beach and hooked a ride on one of them. A duck has no crew except the

GMC TRUCK & COACH DIVISION
GENERAL MOTORS



HOME OF COMMERCIAL GMC TRUCKS AND GM COACHES... VOLUME PRODUCER OF GMC ARMY TRUCKS AND AMPHIBIAN "DUCKS"

New Lighting Catalog Makes Repairs Easy

A new Safety Lighting Replacement Parts catalog just distributed to jobbers by the K-D Lamp Company, Cincinnati, Ohio, serves as a guide for identifying, ordering and assembling parts for all types of K-D lighting equipment for trucks, buses and passenger cars.

H. F. Griffin, vice-president of K-D, predicts that this catalog will do much toward eliminating the discarding of lamps because of difficul-

ties in repair. As a simple and quick reference, it enables K-D distributors to offer better service to fleet maintenance men and dealers; makes ordering easy and directs installation. Each part is readily identified by order number. The parts are arranged in order of their assembly.

Free "Want List" Pads

L. J. Miley Company, Inc., manufacturer of brake materials has issued a handy, ruled "Want List." Always useful in service shops, these want

list are in pads of 25, size 5 1/4 x 8 1/2, attractively printed in two colors, and may be obtained from Miley jobbers on request.



R. E. Frye, left, for the past seven years a partner of Bryan Automotive Parts Co., Bryan, Ohio, is now associated with The Aro Equipment Corp. as a field sales and service representative.

Ernest W. Kisby, right, has been appointed service engineer for World Bestos Corp., Paterson, N. J., manufacturers of Grafil brake linings.



W. E. Canfield, left, for the past two years assistant to the president of The S. K. Wellman Co., Cleveland, has been elected vice-president in charge of sales of Velvetouch Bimetallic friction materials.

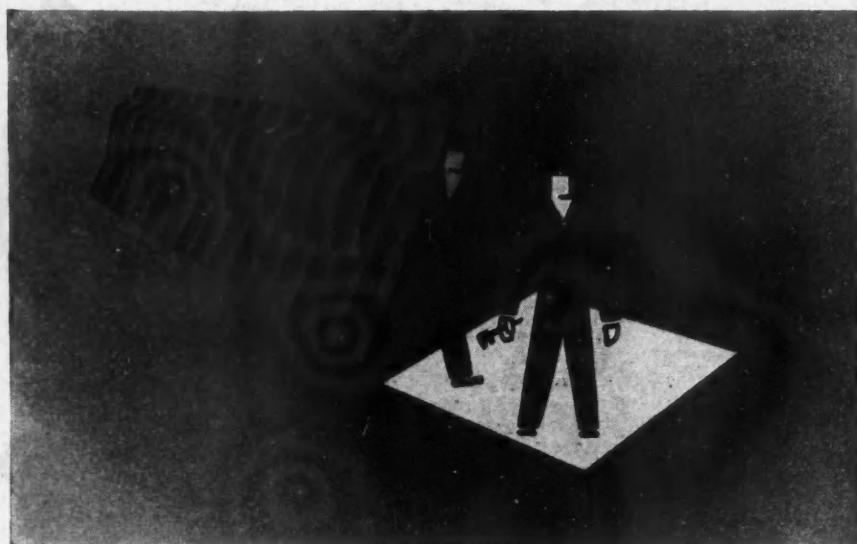
John B. Walker, right, for the past two years a director of the Aircraft Accessories Corp., Kansas City, Kan., was elected vice-president in charge of sales with headquarters in New York City.

Pierre Schon Dies

Pierre Schon, who for many years took an active part in truck legislative affairs, died in Jacksonville, Fla., recently at the age of 64. At the time of his death he was president of the General Truck Co., of Jacksonville, and the Truckaway Corp., of Pontiac, Mich. For many years he was with General Motors Truck Co.

Gardner Joins McAleer

M. E. "Doc" Gardner, formerly sales manager for the Automobile Equipment Company, Detroit automotive wholesalers, has joined the McAleer Manufacturing Co., Rochester, Mich., as manager of the Chemical Division. Under his direction will be the company's complete line of automotive chemicals, industrial cleaners and compounds.



Solve MAN-POWER SHORTAGE

... IN YOUR SPRING SERVICING DEPARTMENT

Put your spring replacement and servicing work up to a Rowland Spring distributor. Here's why! Knowing springs, how to make them deliver a full lifetime of service, what to look for that might cause premature failure and how to prevent serious spring trouble, is the business of Rowland Spring distributors. And they're good at it. They have a wealth of practical experience gained over the years on thousands of trucks and buses.

There are nearly a thousand such Rowland Spring distributors, supported by master stocks of Rowland quality springs, in six strategically located Rowland branch warehouses. Put this labor-saving, cost-cutting service to work for you. Write us today for details of Rowland Spring Service.

BRANCHES: ATLANTA, Wm. and Harvey Rowland, Inc., 449 Marietta St., N.W. • BIRMINGHAM, Birmingham Spring Service, Inc., 2017 Avenue B, South • CHICAGO, Wm. and Harvey Rowland, Inc., 2732 Indiana Ave. • JACKSONVILLE, Jacksonville Spring & Alignment Co., 137 Jefferson St. • PHILADELPHIA, Wm. and Harvey Rowland, Inc., 1521 No. 33rd St. • PITTSBURGH, Point Spring Co., 419 Melwood St.



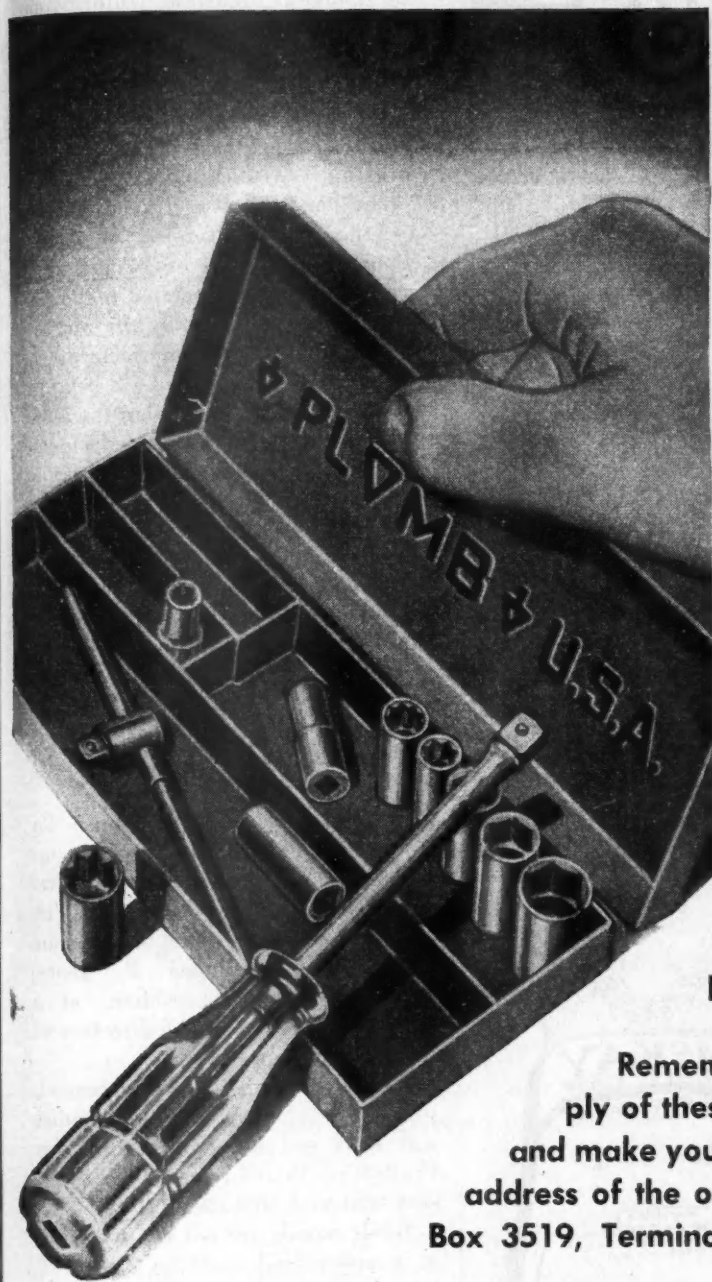
WM. and HARVEY ROWLAND INC.
FRANKFORD, PHILADELPHIA 24, PENNA.

SPRINGS: MUFFLERS • WHEEL SUSPENSION PARTS • UNIVERSAL JOINTS

150th ANNIVERSARY OF AMERICA'S OLDEST LEAF SPRING MANUFACTURER

AVAILABLE NOW!

at Plomb Distributors in limited quantities



Plomb Midget Tool Sets

($\frac{1}{4}$ " Square Drive)

Three different assortments of Plomb's famous Midget sockets and attachments may now be obtained through your Plomb Jobber if you act promptly.

Set 4700-A, as illustrated, includes nine sockets, sliding bar and spin type handle. 4700-B is identical plus no-drag ratchet. The 4700-F set is composed of nine sockets with both hinge and pin handles.

Remember that your Plomb Distributor's supply of these tools may be limited. See him today and make your selection or write us for the name and address of the one nearest you. Plomb Tool Company, Box 3519, Terminal Annex, Los Angeles 54, California.

Pyroxylin handle
spinner

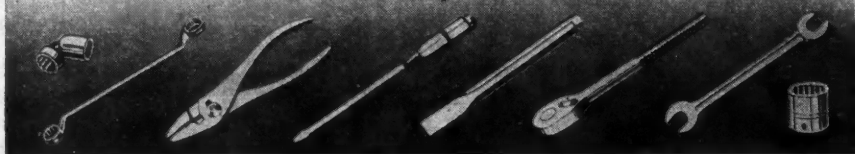
Thin wall Plomballoy
sockets

24 gauge metal box
 $6\frac{1}{2}$ " x $2\frac{5}{8}$ " x 1"

Buy a War Bond Today

PLOMB

Fine Hand Tools for All Industries



TIRE CHAIN INFORMATION

Worth Keeping- REGARDING

TIRE CHAIN Limitation Order L-201, revised July 10, 1943, and again amended in its entirety April 3, 1944, permits manufacturers this year to make only 48% of the total weight of the 1941-42 season tire chain sales in the following proportion:

- 24% in Assembled Passenger Car Chains, Cross Chains and Repair Parts
- 24% in Assembled Truck Chains, Truck Cross Chains and Repair Parts

Regular weight (not Extra Heavy) and Multi-grip Bar Reinforced Assembled Chains and Cross Chains can be made and shipped to Jobbers' and Dealers' stocks in the following sizes only:

Passenger Cars	Trucks (Single and Duals and Duals with Triple Side Chains)	
6.00—16 LCS	6.00—16	7.50—20/34x7
6.50—16	6.50—20/32x6	8.25—20
7.00—16	7.00—20	9.00—20
7.50—16	7.50—16	9.75—20
	7.50—17	

Sizes not listed above, as well as Extra Heavy Chains, may be made and shipped *direct to the user*, but, where practical we recommend adaptation of an approved size and type. Metallic plating of Chains for rust protection is prohibited.

CHANGES—AND WHAT THEY MEAN:

The only change in permissible sizes is the addition of 6.00-16 to the truck chain classification.

An increase of 8% over last year's total production (by weight) is permitted. *Warning*—do not interpret this to mean that chains will be more plentiful this year. The reverse may be true, due to depletion of stocks in inventory at the beginning of last season. The allowable new production will not begin to satisfy the demand. Urge everyone to make present chains last by frequent inspection, prompt repair and careful use.



REGULAR AND BAR-REINFORCED MULTI-GRIP TIRE CHAINS

THE MCKAY COMPANY
PITTSBURGH, PA.

WELDING ELECTRODES COMMERCIAL CHAINS TIRE CHAINS

MCKAY TIRE CHAINS ARE DISTRIBUTED THROUGH JOBBERS

Studebaker Wartime Public Services Win Recognition

Studebaker's wartime public service program has received further recognition with the announcement of a National War-Theme Award for the booklet "Wartime Information for the Delivery Truck Operator," R. G. Hudson, manager, truck division, has disclosed. This Studebaker booklet was one of three entries to win awards in the Automotive Conservation Classification.

The National War-Theme Awards are the wartime version of annual competitions, based on expert preparation and use of printed materials, sponsored since 1922 by the Martin-Cantine Co., paper manufacturers in Saugerties, N. Y.

This current award is but the latest of many favorable acknowledgements Studebaker's wartime public service program has received. Just a few months back, in a 79-page U. S. Department of Commerce report commenting on the wartime dealer-aid activities of 19 outstanding American corporations, six pages were devoted to Studebaker.

Postwar Jeep Bodies for Civilian Use Planned

A contract to build the bodies for a postwar model of the Jeep has just been given the American Central Mfg. Corp., Connersville, Ind., by Willys-Overland, Toledo, it was announced by Saunders P. Jones, American Central president, at a meeting in New York of directors of the Indiana concern.

Under the terms of the agreement, production of the first 25,000 bodies will start just as soon as the War Production Board releases the necessary material allocations.

While details are not yet available, it is understood that the design of this peace-time Jeep will incorporate several changes to facilitate its use for farm and general utility purposes.

Meanwhile, the American Central Mfg. Corp. will continue to build the regular Jeep bodies for both Willys-Overland and the Ford Motor Co., Mr. Jones said. He added that to date American Central had produced approximately 350,000 Jeep bodies and was continuing to turn them out at the maximum daily capacity of the plant.

No design changes are required to make the Boots Nut standard equipment. Manufacturers can offer this improvement on even the first post-war models.



THESE NUTS TAKE A BRUTAL BEATING

... but, in a full year's test on U.P.S. trucks, not a nut came loose, not one had to be re-tightened!

You—and all fleet owners—know the trouble ordinary nuts cause on universal joint flanges and chassis spring U-bolts.

They're constantly working loose.

Smart United Parcel Service engineers checked their records on 2900 trucks; saw the waste, delays and lay-ups caused by nuts coming loose at these two points in particular.

So they selected these two points on a number of trucks to test the grip of the Boots All-Metal, Self-Locking Nut.

And, while their regular trucks kept on having constant "loose-nut troubles," at the end of six months not a single Boots Nut had required attention! Not one had to be re-tightened!

But how about *after* six months?

After a full year of wearing, tearing duty, every

Boots Self-Locking Nut was still as tight as ever!

Because of its built-in, all-metal lock, the Boots Nut *holds* with a grip of steel! It never slips. It never deteriorates. It never develops accelerated locking loss when removed and re-used again and again. (An ordinary wrench is the only tool needed.)

Neither oil, gasoline, heat, cold nor vibration affects the perfect efficiency of Boots Nuts.

All Boots production today is reserved for military aircraft. But, on your post-war automotive equipment, you can expect All-Metal, Self-Locking Boots to cut down upkeep, reduce delays, and extend the life of every kind of motor vehicle.

BOOTS SELF-LOCKING NUTS

"There's No Excuse for a Nut Shaking Loose"

Boots Aircraft Nut Corporation, General Offices, New Canaan, Conn.

NEW PRODUCTS

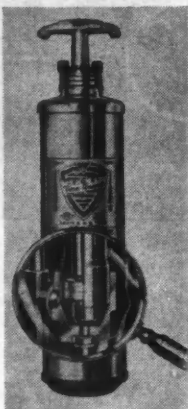
(Continued from Page 64)

aligned with the ports to be cleaned. Only four turns of the handle are required to punch the carbon out of all 64 ports in each sleeve—a matter of minutes for all cylinders. The special alloy punches are individually mounted in the head so that replacement is easy and economical.

Use Free Postcard for More Details.

P262. Hand Fire Extinguisher

A light-weight, small size (1 or 1½ qt.), vaporizing liquid type fire extinguisher is offered by the General Detroit Corp., Detroit. Called S. O. S. Fire Guard, this extinguisher is standard equipment on the Army's newly-announced troop and supply carrier, the "Weasel." Its action is said to be particularly fast on electrical, oil and gasoline fires.



One of the outstanding features claimed for this fire fighter is a patented "safety Phlare" design of the lower end of the pump cylinder. The cylinder is expanded at the bottom to insure immediate free-floating piston action even after long periods of disuse. Yet, in the remainder of the cylinder, felts fit snugly to insure top operating efficiency. Absence of metal-to-metal contact in the expanded section eliminates the possibility of piston sticking to cylinder wall.

Other features include a panic-proof safety lock, actuated by turning handle either right or left. Locking shoulders are pyramid shape for easy turning. Cap, stuffing box, handle lock, and handle seal are a single piece brass drop forging eliminating all interior soldered joints.

Use Free Postcard for More Details.

P263. Body Cleaner and Wax

Zecol, Inc., Milwaukee, Wis., has developed a body scum remover and wax which should find favor with fleet operators. One of the reasons is

based on a claim that with Zecol Wax it is possible to cut polishing time in half, or less, eliminate most of the hard work, and still produce a lasting, brilliant finish that may take many months of washing and weather without becoming dull.

The instructions for its use are stated to be: "Just rub on, let dry a minute; wipe off."

For trucks with a heavy road film, the use of Zecol Scum Remover is recommended before applying Zecol Wax.

Use Free Postcard for More Details.

P264. Power Grease Gun

A new Alemite electric portable power grease gun, Model 7190, the latest addition to the Alemite line of industrial equipment, is announced by the industrial Alemite division, Stewart-Warner Corp.

The new gun has been developed to deliver fast, positive high pressure lubrication with all types of lubricants that seek their own level. Equipped with large heavy duty wheels for easy mobility, operation is further facilitated by means of a ball bearing front caster in the steering mechanism.

A quiet driving device connects the heavy duty one-third horsepower electric motor to a high pressure



grease piston and cylinder, made of specially treated and hardened steel, and fitted to close limits to prevent by-passing. A mercury switch automatically shuts off the motor when 5000 lb. of pressure have been built up in the delivery hose.

The gun has an easily accessible

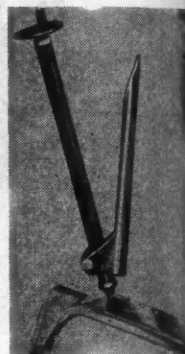
check valve and pressure release valve. Equipment includes a 12-ft. electric cord, a 6-ft. one-quarter in., 20,000-lb. burst pressure hose and control valve with hydraulic coupling, combination handle, cord and hose rack. The gun stands 28½ in. high, 15 in. wide and 26 in. long.

Use Free Postcard for More Details.

P265. Blind Fasteners

The B. F. Goodrich Co., Akron, has developed a blind fastener which serves as a nut plate or rivet, or both, where only one side of the work is accessible.

Marketed under the name Rivnut, it is a one-piece internally threaded and counterbored tubular rivet that can be pulled up or headed while working entirely from one side, forming a bulge or head on the blind side. This head is large enough to resist being pulled through wood or metal, even under conditions of eccentric load.



Rivnuts are made from an aluminum alloy. An anodizing treatment further increases the corrosion resistance of the aluminum. They are made in open and closed end styles, keyed and keyless, and available in a wide range of lengths and sizes with countersunk or flat heads, and with attachment or pull screws.

Use Free Postcard for More Details.

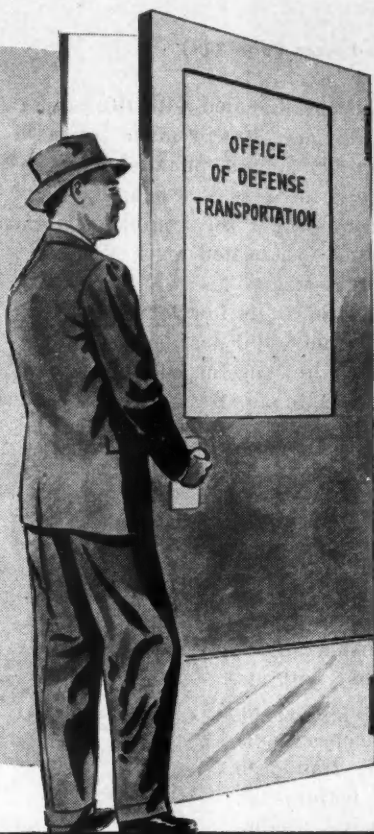
P266. Emulsifying Degreasant

The development of a new emulsifying degreasant, G-BEX 45-A, has just been announced by the Gaybex Corp., Nutley, N. J. The most unusual characteristic of this compound is that it gains in strength with dilution.

Other unique characteristics of this degreasing agent are its fresh, clean odor, rapid action and, despite its powerful detergent action, it will not corrode metals or harm the skin. The alkaline factor of this compound is p-H 7 (neutral), and its flashpoint 150 deg. Fahr.

G-BEX is recommended by the
(TURN TO PAGE 248, PLEASE)

NO NEED TO SEE THE O.D.T. TO GET A TRUCKTOR THIRD AXLE!



Now freed from rationing, Trucktor Third Axles are one of the most effective means of gaining additional hauling capacity without additional trucks. Easily ordered and quickly added to two axle trucks, they **DOUBLE THE PAYLOAD PER TRUCK**. Thus, Trucktor Third Axles eliminate trips caused by inadequate hauling capacity and thereby save tires and gasoline.

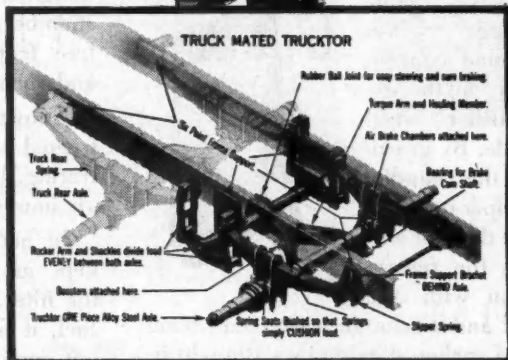
Moderately priced, inexpensively installed and maintained, Trucktor Third Axles make the extra payload per truck practically an all-profit load. These features, together with Trucktor's greater safety and lower insurance rate per weight unit, are among the reasons why prominent fleet owners specify Trucktor Third Axles for new trucks as well as conversions.

The lifting of rationing has started a rush of Trucktor orders—taxing our capacity to produce Trucktor Third Axles. So act now. Write us or ask your truck dealer for the complete Trucktor story.

THE TRUCKTOR CORPORATION
156 Wilson Ave. • Newark 5, N. J.

TRUCKTOR REQUIRES LITTLE MAINTENANCE

There is no excess weight or troublesome gearing in the Trucktor Third Axle. That means lower maintenance, longer engine life and better gasoline mileage. Additional details are listed in the Trucktor specification sheet. Get it today.



NEW PRODUCTS (Continued from Page 246)

manufacturer for the cleaning, degreasing and dewaxing of machinery, motors, equipment, floors and parts. It is easy to use and may be applied with a brush or spray gun. It also may be used in standard emulsion degreasing tanks, either cold or heated.

When the dirt, oil and grease are thoroughly saturated, they are removed simply by flushing or hosing with water. A trace of the residual compound minimizes rusting after the washing process.

Use Free Postcard for More Details.

P267. Heavy Duty Spark Plug

Blue Crown Spark Plug Co., Chicago, Ill., is now marketing its new "Husky" sparkplug for which it claims such features as controlled heat zone, oversize porcelain insulator, electrode expansion space and long flash-over path.

The new construction is said to be marked by the liberal use of materials for sturdiness, under tough going and rough handling, and long life resistance to vibration and heat expansion stresses.

The greater flash-over path from terminal to shell is said to assure instant starting and running at full throttle, without troublesome sparking on the outside, so often noticeable with the old style plug when the air is humid, after car washing or following a rain. Even when the gap is increased beyond desirable limits the sparking still takes place at the points.

Use Free Postcard for More Details.

P268. Aluminum Solder

A new, free flowing solder has just been developed by the Eutectic Welding Alloys Co., New York City. Known as EutecRod 199, it is said to be the first free flowing soft solder for use on cast aluminum, wrought aluminum, and on steel, copper and nickel alloys. It will even bond to cast iron, if the iron first has been tinned with a zinc-base solder.

Used on aluminum like the old lead-tin solders would be used on tin plate or brass and copper, sheet aluminum now can be lock-seamed, or lapped and spot welded or riveted,

and the joint sealed with this solder. In long laps, it will make joints of moderate strength, but it should generally be used as a seal and for application where the completed joint will not be heated over 212 deg. Fahr.

Because of its low temperature of application—400 deg.—it is possible to join thin sheetal without danger of distortion.

Use Free Postcard for More Details.

P269. Wheel-Type Extinguisher

Randolph Laboratories, Inc., of Chicago, Ill., has produced a 25-lb. wheel-type carbon dioxide fire extinguisher that may be moved and operated with uninterrupted, singlesweep action.

The Randolph "25" features an exclusive palm-trigger valve, mounted conveniently on the extinguisher steel handle. By grasping the handle, the operator can move the unit and press the release button with one hand and discharge a sweeping blanket of carbon dioxide in a 10-to-20 ft. arc.

Release of pressure on the palm trigger automatically stops the flow of carbon dioxide gas. This eliminates twisting of valves and retains the remainder of the charge for repeated attacks.

The 5¾-foot horn-and-hose connection keeps the operator at a safe distance from the heat of the fire. Mounted on hard-rubber wheels, the unit is self-balanced—standing or in operation.

Use Free Postcard for More Details.

P270. A.C. Electrode

A new general-purpose electrode for mild steel, designated as Fleetweld 35, and made specifically for A.C. operation, has been announced by The Lincoln Electric Co., Cleveland.

This new shielded arc electrode—which also will operate on D.C. with

either polarity, depending upon the type of work being done—has all the desirable characteristics of the Lincoln Fleetweld electrodes for high speed welding of single or multiple passes for work in flat, vertical or overhead positions.

Available in 1/8 in., 5/32 in. and 3/16 in. sizes, Fleetweld 35 is said to have a tensile strength of 62,000 to 70,000 p.s.i., yield strength of 52,000 to 57,000 p.s.i., and ductility (elongation in two in.) of 23 to 30 per cent.

Fleetweld 35 conforms to American Welding Society specifications for arc welding electrodes classes E-1600 and E-6011, is made in the standard 14 in. lengths and is packed in 50 lb. containers.

Use Free Postcard for More Details.

P271. Supplementary Lubricant

The Mauston Corp., Winona, Minn., is marketing an upper cylinder lubricant and degumming agent designed to keep the combustion chamber, pistons, rings and valves free from carbon, gummy deposits and varnish.

Known as Pow-R-Flo, it is a pure treated mineral oil—tough, penetrating, heat resisting, and free from all impurities and deposits.

In action, sludge is reduced and kept in suspension for removal by the filter. When introduced into the fuel, it is said to dissolve and clean out gummy deposits, thereby improving engine operation.

Use Free Postcard for More Details.

P272. Plastic Tape

"Fibron," a new many-purpose plastic tape has been announced by Irvington Varnish & Insulator Co., Irvington, N. J.

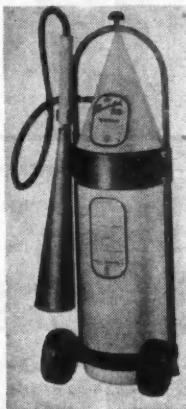
It is used for insulating wires, cables and electrical equipment; for splicing cables; and for protecting wiring and piping exposed to caustic or corrosive fumes, oil, grease, acids, alkalis or moisture.

Remarkably flexible and elastic, Fibron tape is manufactured from Vinylite resin. It is heat-sealing, flame resistant, and high in dielectric and mechanical strength.

Samples are available.

Use Free Postcard for More Details.

(TURN TO PAGE 250, PLEASE)



FOR
Safety
LIGHTING AND
EQUIPMENT

it's
DO-RAY
ALL THE
WAY

DO-RAY CERTIFIED Products pass specifications of S. A. E. and I. E. S. meeting all I. C. C. requirements.

No. 70 GIANT-LITE

Ideal for trucks with rear doors extending full height of body. Angle bracket permits 4 different mounting positions.

No. 400 ZEPHYR

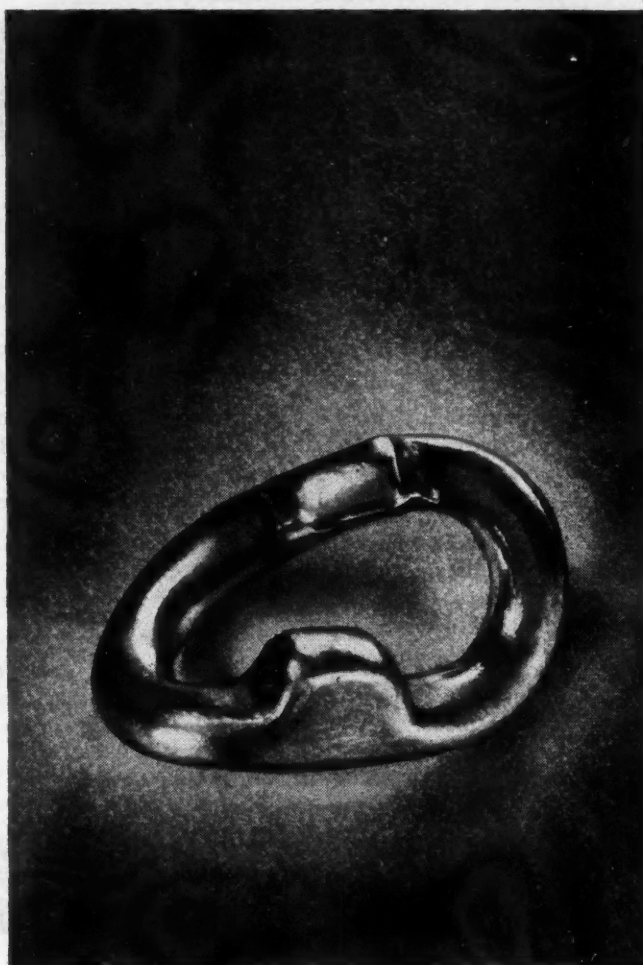
For trucks, passenger cars, trailers. Base curved and mounted on resilient pad—will fit most any surface—gasket seals lens and eliminates dust from inside lens and on bulb. Uses $1\frac{1}{2}$ C.P. Bulb—50% more light—50% less current.

No. 600

SEALED BEAM FOG LAMP
With General Electric Sealed Beam Unit (Glaseal) Fog Lamp for use on medium and heavy motor trucks, trailers, passenger carriers, off-the-high-way motor vehicles and motorized equipment. $6\frac{1}{2}$ inch diameter, equipped with theft proof washers, victory grey finish on all models.

No. 1292 KNOBBY REFLEX

For trucks, busses or trailers—designed and constructed to withstand the severest abuse. White, amber, red or green.



LINK TO SAFETY

It's the exclusive* saw-toothed lugs that make Campbell Lug-Reinforced Tire Chains radically different! They assure positive traction: make possible safe starts and stops without dangerous, rubber-chewing slip and skid. Tough, hard-wearing steel, and one-piece construction, mean increased chain mileage. International Chain & Mfg. Co., York, Pennsylvania.

DO-RAY
LAMP COMPANY

1458 S. MICHIGAN AVE., CHICAGO

SAFETY LIGHTING AND REFLECTING EQUIPMENT





Cleaning and Descaling Radiators Now Done Easily, Quickly, Safely

To keep radiators at peak efficiency, there is nothing that will help so much as regular cleaning with Oakite Penetrant.

Merely fill the radiator and system with the recommended solution, run motor as specified, then drain and flush. Inspection will reveal that grease, dirt, loose scale and rust are thoroughly removed safely . . . and in a fraction of the time formerly required.

In instances where heavy insulating deposits of lime scale have been built up due to hard water conditions . . . or if radiator cleaning has been deferred too long . . . use Oakite Compound No. 32 as directed.

For full information, write for new, free booklet. It contains complete directions also for handling other recurring maintenance tasks. Send for your free copy today.

OAKITE PRODUCTS, INC., 26D Thames Street, NEW YORK 6, N. Y.

Technical Service Representatives in All Principal Cities of the United States and Canada



PRESERVES GASKETS, OIL, AND GASOLINE

Key seals joints anywhere throughout the gasoline system without danger of washing out of the joint. It never "freezes", never hardens or spoils.

Also, it makes gaskets oil-tight in crankcase, cylinder head, transmission, differential and manifold, and prevents battery connections from corroding.

One coating now may save you many man hours and new parts later.

Test it out yourself with a free sample.

EAST ST. LOUIS, ILLINOIS
2612 McCASLAND AVENUE



NEW PRODUCTS

(CONTINUED FROM PAGE 248)

P273. Zinc Welding Rod

Zinc base die castings, which are normally difficult to repair, now can be easily and effectively reclaimed with the improved gas welding rod 195 that is now being marketed by Eutectic Welding Alloys Co., New York City.

The new rod 195 has a lower melting point and a still lower bonding temperature than the original alloy, which makes it easier to apply without danger of damaging the parent metal. The improved rod is also easier to build up with, has greater tensile strength, and matches the hardness of the die castings. It is available without priority but end use is necessary.

Use Free Postcard for More Details.

END

(Please resume your reading on P. 60)

Steel Allotment for Parts and Trucks Cut

Controlled materials for domestic transportation have been reduced by about one-third from the amounts requested by the Office of Defense Transportation for the fourth quarter of 1944, the ODT was advised by the War Production Board.

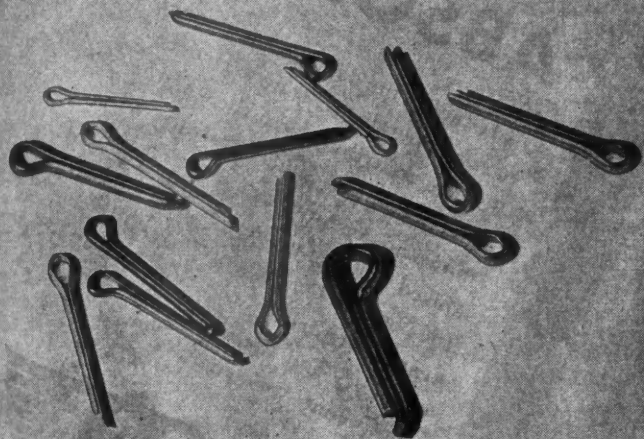
ODT was notified that, under the Controlled Materials Plan, the domestic transportation industry will receive 1,039,100 short tons of carbon steel in the October-November-December quarter of 1944, compared with a requested 1,532,633 tons.

The WPB allotted 145,000 tons for automotive replacement parts, for which the ODT had requested 160,000 tons. No allotments were made for light trucks and railroad passenger cars, for which the ODT had requested 76,562 tons and 6488 tons, respectively.

Carbon steel for medium and heavy trucks, truck bodies, trailers, third axles and lower fifth wheels was cut from approximately 200,000 tons requested by the ODT to 90,000 tons.

ODT carbon steel requirements for locomotives, freight cars, marine equipment, integral buses, street cars, trolley coaches, truck-trailers, including petroleum transport units, and water transport equipment, were met.

Check your
stocks often



**and re-order
frequently**

● Volume producers of Cotters for many years, Lamson & Sessions greatly increased production of these parts which are used on every piece of war equipment. Like the automotive trade, the army and navy uses Lamson Cotters in a full range of sizes and in vast quantities. Now increased production facilities enable us to assure you a plentiful supply. Re-order frequently and check your stocks often. Your jobber will be able to keep you supplied. Ask for Catalog 42-A if you do not have a copy.

THE LAMSON & SESSIONS COMPANY • CLEVELAND 2, OHIO
General Offices: 1971 West 85th Street

Lamson

DU PONT RECOMMENDS

259-LINE DUCO

REG. U. S. PAT. OFF.

**for trucks and buses
TODAY**

YOUR OLD FAVORITE, DULUX, will be back as soon as possible. At present *phthalic anhydride*, an essential DULUX ingredient, is needed as a constituent of smokeless powder and for use in the manufacture of an insect repellent to protect our fighting men against disease. As a result, government order limits paint manufacturers to only a small quantity of phthalic anhydride, for the preparation of finishes for a few rigidly specified uses.

Until DULUX is again available, we recommend that you use 259-Line DUCO as the finish to protect irreplaceable automotive equipment. This fast-drying lacquer is easy to apply, dries to a high initial gloss, and requires no rubbing. 259-Line DUCO may be new to you, but it is not a wartime development. For years it has been the choice of American railroads for painting coaches, and its wearing qualities have been proved under severest climatic conditions. Use 259-Line DUCO now—plan on post-war DULUX tomorrow.

E. I. du Pont de Nemours & Co. (Inc.),
Finishes Division, Refinish Sales, Wilmington 98, Delaware.

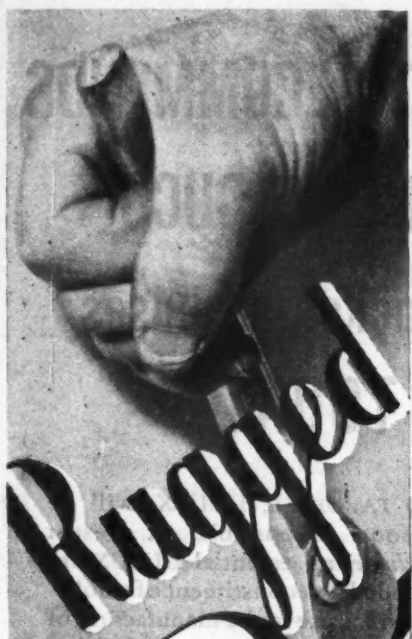
BUY BONDS—BUY MORE THAN BEFORE!

**DU PONT
REFINISHING
MATERIALS**

**Better Things for Better Living
... through Chemistry**



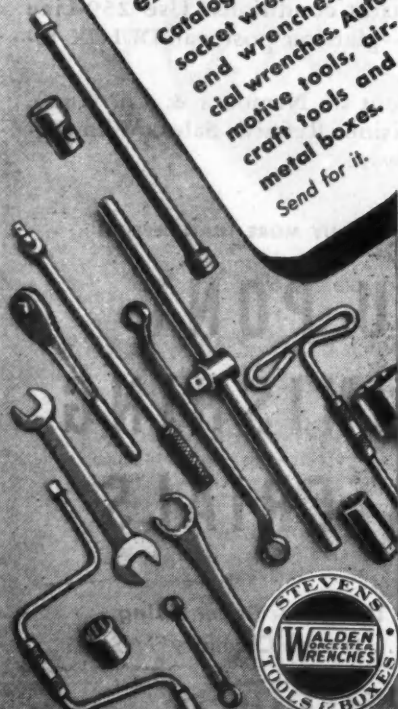
REG. U. S. PAT. OFF.



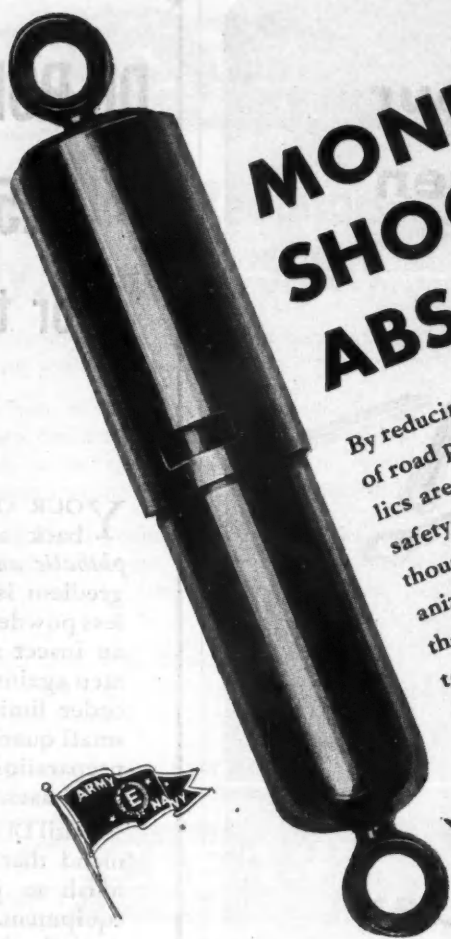
**Designed For a
HARD LONG LIFE
WALDEN WORCESTER
TOOLS ARE BUILT
TO TAKE IT**

**Modern Materials,
heat treated provide
extra strength.**

**Catalog No. 141 pictures
socket wrenches, open
end wrenches, spe-
cial wrenches. Auto-
motive tools, air-
craft tools and
metal boxes.
Send for it.**



STEVENS WALDEN, INC.
468 SHREWSBURY STREET
WORCESTER, MASSACHUSETTS



MONROE SHOCK ABSORBERS

By reducing the damage and danger of road pounding, Monroe Hydraulics are contributing to the greater safety, comfort and durability of thousands of America's finest mechanized fighting units now smashing the Nazis in France and Italy. Battle-tested Monroes will add to the efficiency and life of your war-vital equipment. Write us.



CCJ NEWSCAST

(CONTINUED FROM PAGE 144)

Reconversion Plan May Help on Automotive Items

WPB has finally taken the first big step toward eventual reconversion of American industry with the issuance of Priorities Regulation 25, effective August 15. This is the so-called "spot authorization" order, which will allow WPB field offices to grant permission to manufacturers to produce hundreds of hitherto prohibited civilian items, provided materials, manpower and facilities not needed for war production are available. However, applications from manufacturers employing more than 250 workers, and those in critical and acute labor areas employing more than 50 and 100 workers, respectively, will be filed in Washington.

To insure the availability of adequate manpower for necessary war work the War Manpower Commission has been given virtual veto power over any increased production of new items, and for this reason

reliable WPB officials do not believe that the effects of PR-25 will be felt immediately. However, there is unanimity of opinion that when war contracts are cancelled in large quantities PR-25 will provide the necessary blueprint for orderly conversion to peacetime manufacture.

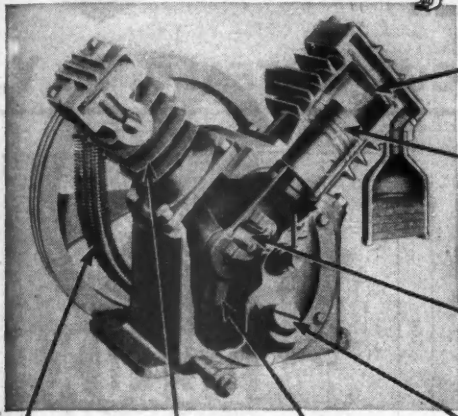
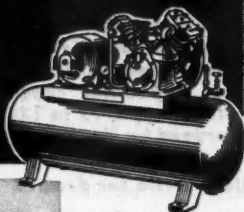
WPB Chief Donald Nelson in announcing the new plan estimated that war production would be cutback 40 per cent with the fall of Germany, making possible a 30 per cent increase in the production of civilian goods, approximately up to the level of 1939. Until Germany is defeated only relatively simple items and in limited quantities will be made under the new order.

The order conforms to the recent ruling of War Mobilization Director James F. Byrnes, prohibiting increased civilian production in classified areas where it has not been ascertained that labor for such activity is available.

Instructions have been issued to the WPB field offices that increased civilian production may not be authorized. (TURN TO PAGE 258, PLEASE)

INGERSOLL-RAND COMPRESSORS

HAVE *Built-in dependability*



FINGER VALVES
Efficient...
Have long life...
Readily accessible.

2 COMPRESSION RINGS AND 2 OIL RINGS

Reduce oil consumption...
More efficient compression.

CENTRIFUGAL GOVERNOR

Automatically prevents machine starting against load.

FINNED INTERCOOLER
Improves cooling...
Reduces power.

SEPARATE CYLINDERS
Allow better air circulation and improved cooling.

SPLASH OILING
Simple and reliable...
Nothing to break or clog.

AUTOMATIC-LEVEL OIL FILLER
Prevents adding too much oil...
Keeps crankcase dust tight.

Our line of air compressors is complete. Ask your jobber for further information, Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.

Ingersoll-Rand

3-483

★ MOST
"KING" TESTING EQUIPMENT

... is now available without Priority ★



Most of the essential items of "KING" Testing Equipment for motor tune-up are now available because of a WPB ruling which enables us to increase production on many items. It may be possible now to obtain the equipment you need to make your shop more efficient. Ask your "KING" Jobber for a list of equipment available. "KING" Testing Equipment is a pioneer in motor testing — thousands of repair shops in all parts of the world use "KING" Testing Equipment, battery chargers, etc.

"KING" Fast Chargers are now available

Ask Your Jobber or Write Us

The ELECTRIC HEAT CONTROL Co.

9127 INMAN AVENUE • CLEVELAND 5, OHIO

GOOD "KING" PRODUCTS SINCE 1914

PATENTED

DUAL-SPIRAL

EXPANSION REAMER

FOR

PIN FIT JOBS

Finish reams piston pin holes fast and absolutely accurately in one operation. Eliminates honing. Equally efficient for piston pin and king bolt fitting, align reaming of transmissions, steering sector and water pump bushings.

★ Adjustable for Size on the Job!

★ Eliminates Abrasive Left by Hone.

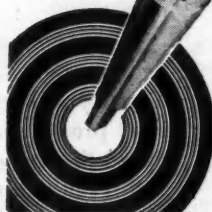
★ Removable Blades Easily Replaced.

★ Long Pilots for Alignment Jobs.

★ .035" to .080" Straight line Expansion.

★ Reams Smoothly over Keyways and Split Bushings.

WRITE FOR SPECIFICATIONS



LEMPCO

5734 DUNHAM ROAD
BEDFORD, OHIO

POW-R-FLO

THE SUPPLEMENTARY LUBRICANT

STEPS UP PERFORMANCE CUTS DOWN COSTS!

JUST add POW-R-FLO to the gasoline and lubricating oil as directed. It penetrates into close tolerance and super-heated surfaces, keeps engines COMPLETELY lubricated, clean and FREE-RUNNING.

POW-R-FLO also dissolves gummy deposits, retards the formation of varnish, sludge and carbon, keeps sludge in suspension in the oil for easy removal by the regular oil filter. It keeps engines running much LONGER without overhauling, reduces fuel consumption. ABSOLUTELY HARMLESS to engines, no matter how much is used.

Packed in 2 qt., 1 gal., and 5 gal. cans; 15, 30, and 55 gal. drums. Try it—you'll be pleased. Write for full information.

The MAUSTON Corporation
WINONA MINNESOTA



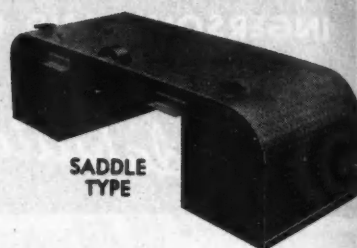


CYLINDER
TYPE

You must get the **MOST** from your present truck equipment to keep War Material moving.

Large capacity **SNYDER** (patented) Safety Fuel Tanks will eliminate unnecessary refueling delays. By the use of the Flame Guard Safety Valve (standard on all Snyder tanks) added protection is afforded against fire hazards. Capacities range from 28 to 50 gallons in the cylinder type; 75 to 125 gallons in the saddle type. Approved by the Underwriters' Laboratories, Inc.

Distributed in all principal cities. Write for descriptive literature.

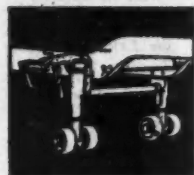


SADDLE
TYPE

SNYDER MANUFACTURING CO. Dept. CC BUFFALO, N. Y.

AUSTIN

THE ACCEPTED
STANDARD . . .



A complete line
of **LANDING
GEARS . . .**
**HORIZONTAL,
VERTICAL and
FOLDING TYPES**

Write for complete information on "SAFETY
PROPS" and FIFTH WHEELS

AUSTIN

TRAILER EQUIPMENT COMPANY

MUSKEGON
MICHIGAN

FOR BETTER BODIES

The mark **SUPERIOR GALVANNEAL** identifies the most highly developed zinc coated (heat treated) steel sheet for truck and trailer body construction.



THE SUPERIOR SHEET STEEL CO.
CANTON, OHIO



Trucks

**HEAVY DUTY FOR
OFF THE HIGHWAY SERVICE**

— Specially Designed for —
Coal Mining—Iron Ore Mining—Copper
Mining—Pit and Quarry—Logging—Oil
Fields—Etc.
It Costs No More for Trucks Specially
Built to Fit Your Needs. Have Our Engi-
neers Visit and Analyze Your Operation.

DART TRUCK COMPANY
KANSAS CITY, MO.

**THE COMPLETE LINE
THAT COMPLETELY SATISFIES**



THE FITZGERALD MFG. CO., TORRINGTON, CONN.

**FITZGERALD
GASKETS**

CCJ NEWSCAST

(CONTINUED FROM PAGE 252)

thorized until such time as labor checks have been made and the area representative of WMC has certified in writing that the increased manufacture of civilian goods will not interfere with either local or inter-regional recruitment of labor for war production.

Since new supplies of materials and components in any appreciable quantity will not be available until war production programs are reduced the immediate production that will result will come mainly from the use of materials and components in idle and excess inventories. It is not expected that production will result in any volume until new supplies are made available as a result of new cutbacks and terminations of war contracts.

Products of interest to the automotive industry and covered by the following list of orders are subject to the spot authorization procedure. Relief from provisions of the orders will be granted under the spot procedure only to the extent that they prohibit or limit production, other provisions of the orders will remain in effect. However, many of the "L" orders are to be amended to achieve better cohesion with the spot procedures. The following are the orders applying specifically to automotive products:

L-158, Automotive Replacement Parts; L-180, Replacement Storage Batteries; L-270, Automotive Maintenance Equipment; L-314, Lubrication Equipment; and L-201, Automotive Tire Chains, Tractor Tire Chains and Chain Parts.

Just how great an increase of these items can be obtained through use of idle and excess inventories and
(TURN TO PAGE 260, PLEASE)



**KEEP YOUR
VEHICLES MOVING
ECONOMICALLY**

with

**HALL VALVE SERVICING
EQUIPMENT**

Ask Your Jobber or write
THE HALL MFG. CO.
TOLEDO, OHIO

FRINK SNOW PLOWS

Both "V" TYPE and
ONE WAY BLADE TYPE

hand or power hydraulic control
FOR ALL MOTOR TRUCKS
FROM 1 1/2 to 10 TONS

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Available in sizes 1/2 oz. to 32 oz.
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or recap. Each time a change is made they should be balanced.

Streamlined **SNUGLS** are the answer to this part of your problem. **SNUGL Fade-away Balance Weights** make dynamic balancing easy—have a dove-tail clip that grips, steel against steel, on each side of the rim flange. Easily installed, they cannot rattle or work loose.

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On trucks which still rely on original equipment for motor temperature control, Dole Replacement Thermostats will lengthen rationed miles through economy of gas and oil. Another cause of engine wear will be minimized.

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CHECK YOUR AIR
MATCH YOUR DUALS

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Experts in Rubber

CCJ NEWSCAST

(CONTINUED FROM PAGE 258)

small amounts of aluminum to be released cannot be adequately determined.

WPB Chairman Donald Nelson has estimated that about 3,000,000 tons of steel and substantial quantities of copper are now available as idle and excess stocks. Aluminum supplies are plentiful and are expected to increase.

Conservation orders controlling the use of aluminum, magnesium, copper, quartz crystals, iron and steel, lead and zinc are also subject to the spot procedure. Until they have been amended, the new procedure grants relief only from the prohibitions against the use of materials.

WPB has promised that other items will be added to the permitted list as rapidly as possible. WPB will also give a preference rating of AA-5 to get materials for the production of items, which the Office of Civilian Requirements deems essential to the civilian economy, provided the other conditions of PR-25 have been met. This essentiality list covers all functional automotive replacement parts; tire chains, tractor tire chains and chain parts; automotive maintenance equipment for shops and garages (passenger car jacks, tire gages, automotive tire pumps, tire tools); all items of lubrication equipment; and blow torches. In addition, under the steel and copper conservation orders the same priority assistance will be given for watches.

Goods that have been out of pro-
(TURN TO PAGE 262, PLEASE)

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"KOLORFILM" DECALCOMANIA

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ECONOMY
DURABILITY

Still Made With DuPont "DULUX"
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INTO EVERY
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CCJ NEWSCAST

(CONTINUED FROM PAGE 260)

duction and will reappear under the spot authorization procedure will obviously create price problems. As this issue goes to press, OPA has made no definite statement of policy on reconversion pricing. However, officials have promised that individual prices will be set rapidly enough so as not to delay the reconversion program.

OPA is expected to take into consideration any increased costs for labor or materials that may have been incurred during the war period, although officials told COMMERCIAL CAR JOURNAL that they will still adhere to OPA's primary duty of holding down inflationary tendencies.

Therefore, no runaway increases are expected, for OPA will not set prices on new items so high as to discourage purchasing. Prices will be set for individual companies and on an industry-wide basis, largely dependent on whether the item was in production during the war and on the scale on which the item can be produced under the spot procedure.

OPA is hopeful that competition will tend to keep prices down to March, 1942, levels and has had several indications that this will be done in industries where a possible loss in the first postwar year will not be considered important in view of long-range market possibilities.

In general, OPA will try to work out price schedules for articles produced under WPB's reconversion program, which are satisfactory to industry, labor and the ultimate consumer, so that industry can produce without fear of a dangerous inflationary trend.

Dayton Rubber Executive Heads Advisory Committee

It was announced in Washington that the Rubber Manufacturers unan-

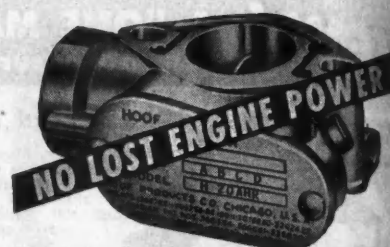
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ALL LIQUID OR GASEOUS FUELS

VALLEY CHARGERS HAVE Gone To War

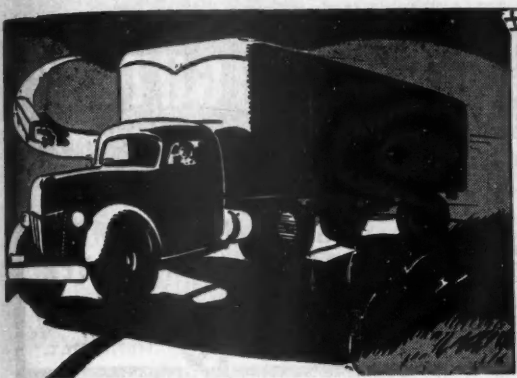
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imously elected Irving Eisbrouch chairman of the Rubber Industry's OPA Advisory Committee. Mr. Eisbrouch is vice-president in charge of tire sales of Dayton Rubber Mfg. Co.

Other elected officers of the committee are J. J. Newman, vice-president of B. F. Goodrich Rubber Co., vice-chairman; Earl McCreery, sales manager of Lee Tire & Rubber Corp., secretary.

Eisbrouch succeeds R. S. Wilson, vice-president of Goodyear Tire & Rubber Company, who resigned after a year's tenure of office as chairman of this committee.

The functions of the Advisory Committee are to consult with and advise the Office of Price Administration, Washington, D. C., on tire and tube price structures.

Ass't Attorney General Hits Integration Plan

Assertions by Wendell Berge, Assistant Attorney General of the United States, that railroads are seeking postwar monopoly of all forms of transportation through establishment of "integrated" transportation systems were immediately followed by press reports of denial of the charges by C. E. Johnston, Chairman of the Western Association of Railway Executives.

In a speech prepared for delivery before the Kansas City (Mo.) Advertising and Sales Executive Club, Mr. Berge said in part:

"In order to continue their restrictive policy on all forms of transportation, the railroads have now come forward with a plan for fastening upon the nation a complete transportation monopoly under their domination. This plan, which is advanced in the name of 'free enterprise,' contemplates the development of regional

(TURN TO NEXT PAGE, PLEASE)

WHEN THE LIGHTS GO ON AGAIN!

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THE MOHAWK RUBBER CO. AKRON, O.

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Allentown, Pa.

TOP QUALITY..

LOW PRICE



Wiry Joe

Wire and Cable
Pawtucket, R. I.

CCJ NEWSCAST

(CONTINUED FROM PAGE 263)

integrated transportation systems, which would control and operate rail, motor, water, and air transport facilities throughout large geographic areas. To achieve this plan they advocate the repeal of the 'charter of American freedom,' the Sherman Antitrust Act, as it applies to transportation. The sponsors of this program in one of their public pronouncements remarked that—"They (the railroad owners) are not concerned whether their returns come from water, rail, bus, or air services." This expression of the railroads' case leaves no question but that the purpose of this scheme to bring all forms of public transportation under the domination of the railroads is designed to preserve the excessive capitalization of the railroads regardless of the economic effects upon the nation.

"It requires no extended analysis to understand the economic power of such 'integrated transportation systems.' Such regional monopolies of all forms of transportation would possess the power of life and death over every community and every industry. Their rate policies would determine the location of industry, the sources from which raw materials would be drawn, the markets to which finished products would move, the possibilities of geographical shifts of population and industry, and the employment opportunities for a large proportion of the workers in industry, trade, agriculture and mining. Indeed, any such extension of private monopoly power would make public ownership and operation of their transportation facilities inevitable unless the people are to accept a freezing of progress and economic expansion. In short, such regional monopolies in the basic industry, whose tentacles reach out into all industry and trade, would have power exceeding that which the government itself can exercise."

Press association reports quoted Mr. Johnston as characterizing the Berge statement as "a new phase of the smear campaign of the antitrust prosecutors."

The creation of regional systems of integrated transportation is sponsored by the Transportation Association of America and has strong railroad endorsement.

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The right light for the right job

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KEEP AMERICA'S KEY TRANSPORTATION ROLLING!

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AUTOPULSE
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- Uninterrupted Schedules
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ALL
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WHEN Uncle Sam called TUTHILL SPRINGS into service, he demanded the best that our sixty-three years' experience, skill and facilities could produce. And he has not been disappointed. They serve on all fronts, in all types of motorized service. Strong, well-made, resilient, tough, durable, they're in front at the front.

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Personnel Notes

Three new appointments to the Merchandising Division of The Electric Auto-Lite Co. have been announced by F. A. Nealon, division sales manager: Frank T. Byrnes as representative in the Eastern Division with headquarters in Richmond, Va.; Adrien H. Vigneau as representative in the Western Division with headquarters in Los Angeles, Calif., and Robert W. Strayer as a territory representative in mid-state New York.

L. M. Oltman, sales truck executive for Dodge Div. of Chrysler Corp. for the past seven years, has been appointed staff executive in charge of the truck and bus division of Differential Wheel Corp.

Arch F. Campbell has been appointed manager of the new branch office established at Tulsa, Okla., by the Detroit Diesel Engine Div. of General Motors Corp.

Jerome V. Tunney has been appointed Bowers Battery & Spark Plug Co. representative in the Albany, N. Y., territory.

John B. Moore has been made general manager of the Gaybex Corp., Nutley, N. J., manufacturer of degreasing and cleaning compounds.

E. G. Jacobs, general manager of L. J. Miley Co., Inc., announced the appointment of Edgar W. (Ed) Young as eastern division manager.

Edwin U. Blanchard has joined Tyson Bearing Corp., Massillon, Ohio, as chief metallurgist.

Earl Cook has taken over the duties of George Weisenbach, advertising manager of the Seiberling Rubber Co., who has been given a leave of absence upon accepting a commission as lieutenant in the Navy.

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Users include Seaboard Freight Lines, Standard Oil Co. of La., N. Y., N. J., U. S. Army Air Forces, U. S. Navy, Socomey Vacuum Oil Co., General Motors Truck and Coach, American Fire Apparatus, Autocar Co., Atlantic Refining Co., International Harvester Trucks, Mack Trucks.

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THEM ROLLING!"**

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ADVERTISERS' INDEX

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AC-Spark Plug Div.....	121-217	Federal Products Corp.....	253	Owens-Corning Fiberglas Corp....	267
Aircraft & Diesel Equipment Corp.	255	Fisk Tire Company.....	232	Packard Electric Div. G. M.....	227
Aircraft Accessories Corp.....	125	Fitzgerald Mfg. Co.....	258	Parish Pressed Steel Co.....	149
Airtex Automotive Corp.....	18	Flare Laboratories Div.....	259	Pedrick Piston Rings.....	12
Albertson & Co., Inc.....	204	Four Wheel Drive Auto Co.	Back Cover	Pennsylvania Rubber Co.....	28
Almetal Universal Joint Co., The..	261	Fram Corporation.....	183	Perfect Circle Co., The.....	7
Aluminum Co. of America...3rd Cover		Frink, Mfr., Carl H.....	258	Perfection Steel Body Co.....	255
Amalie Div. L. Sonneborn Sons, Inc.	100	Fruehauf Trailer Co.....	75	Permatex Company, The.....	260
American Automobile Insurance Co.	241	Fuller Mfg. Co.....	221	Permatex Co., Inc.....	8
American Automatic Devices Co...	226	Fulton Co., The.....	118	Petroleum Solvents Corp.....	192
American Bosch Corp.....	265	G & O Manufacturing Co.....	253	Plomb Tool Company.....	193
American Brake Shoe Co.....	95	Gabriel Company.....	258	Practical Products Co.....	254
American Chain & Cable Co., Inc.	223-240	Gatke Corp.....	263	Prest-O-Lite Battery Co., Inc.....	165
American Hammered Piston Ring Div., Koppers Co.....	201	Gemmer Mfg. Co.....	185	Puritan Co., Inc.....	87
American Safety Tank Co.....	263	General Detroit Corp., The.....	151	Puroator Products, Inc.....	262
American Steel Foundries.....	88	General Electric Co.....	26-218	Pyrene Mfg. Co.....	243
Anthony Co., Inc.....	105	General Motors Truck & Coach Div.	189	Quaker State Oil Refining Corp...	235
Arkansas Fuel Oil Company.....	177	Globe Tire & Rubber Co.....	25	Radiator Specialty Co.....	164
Armstrong Cork Co.....	14	Globe-Hoist, Inc.....	192	Ramsey Accessories Mfg. Corp....	8
Armstrong Rubber Company, The	268	Goodrich Co., B. F.....	141	Raybestos Div., Raybestos-Manhattan, Inc.	267
Associated Tire Lines.....	15	Grico Two-Axle Drive Co.....	159	Reo Motors, Inc..... Front Cover	
Austin Trailer Equipment Co.....	258	Grizzly Mfg. Co.....	260	Resistoflex Corporation.....	261
Auto Gear & Parts Co.....	186	Gunite Foundries Corp.....	112	Rich Valves.....	2
Auto-Lite Battery Corp.....	6	Hall Mfg. Co., The.....	127	Roller Bearing Co. of Amer.....	160
Auto Specialties Mfg. Co.....	198-199	Hansen Mfg. Co., A. L.....	258	Rowland, Inc., William & Harvey	190
Autocar Company.....	17	Haskel Mfg. Corp.....	169	S K F Industries, Inc.....	104
Automotive Maintenance Machry. Co.	94	Haskel Mfg. Corp.....	260	St. Louis Spring Co.....	107
Autopulse Corp.....	264	Hastings Mfg. Co.....	89	St. Paul Hydraulic Hoist Co.....	33
Available Truck Co.....	263	Hell Company, The.....	191	Salisbury Axle Co.....	149
B-W Superchargers, Inc.....	209	Hein-Werner Motors Parts Corp...	213	Sangamo Electric Co.....	225
Baldor Electric Company.....	265	Herbrand Corp.....	90	Sawyer & Son Co., H. M.....	254
Barber-Colman Co.....	114	Highway Trailer Co.....	224	Schrader's Son Div., A.....	222
Bear Manufacturing Co.....	150	Holland Hitch Co.....	58	Sealed Power Corp.....	79
Bell Co., Inc., The.....	259	Hollingshead Corp., R. M.....	264	Seiberling Rubber Co.....	260
Bendix Aviation Corp.....	110-111	Hoof Products Co.....	262	Service Recorder Co., The.....	148
Bendix Products Div.....	110-111	Hunter and Company.....	158	Shuler Axle Co., Inc.....	81
Eclipse Machine Div.....	142	Imperial Brass Mfg. Co., The..	162	Siebling Mfg. Co.....	256
Bendix-Westinghouse Automotive Air Brake Co.....	119	Independent Pneumatic Tool Co..	29	Signal-Stat Corp.....	261
Bird-White Co.....	144	Indium Corp. of Amer.....	264	Simplex Prod. Corp.....	262
Bishman Mfg. Co.....	96-163	Ingersoll-Rand Co.....	257	Snap-On Tools Corp.....	262
Blackhawk Mfg. Co.....	83	International Chain & Mfg. Co...	249	Snyder Mfg. Co.....	258
Blood Brothers Machine Co.....	92	International Harvester Co.....	34	Sparks-Withington Co., The.....	208
Blue Crown Spark Plug Co.....	175	Johns-Manville Corp.....	230	Speaker Corp., J. W.....	179
Bonney Forge & Tool Wks.....	264	Jones-Motrola Sales Co.....	265	Spicer Mfg. Corp.....	149
Boots Aircraft Nut Corp.....	245	K-D Lamp Co., The.....	264	Standard Motor Products, Inc....	166
Borg-Warner Corp.....	18	K-D Mfg Co.....	120	Standard Oil Co. (Indiana).....	11
Bower Roller Bearing Co.....	171	Kathand Corp.....	260	Sterling Motors Corp.....	261
Bowers Battery & Spark Plug Co.	32	Kelite Products, Inc.....	93	Stevens-Walden, Inc.....	252
Bowman Automotive Plastics Co.	262	Kelly-Springfield Tire Co.....	19	Stewart-Warner Corp.....	113
Bridgeport Fabrics, Inc.....	236	Ken Tool Mfg. Co., The.....	264	Studebaker Corp.....	115
Brown Lipe Gear Co.....	149	Kester Solder Co.....	252	Superior Universal Prod. Div.	256
Buell Manufacturing Co.....	265	Key Co.....	250	Superior Coach Corp.....	258
Buffalo Fire Appliance Corp.....	180	Keystone Trailer & Equipment Co.	262	Superior Sheet Steel Co.....	258
Cal-Van Machine Products, Inc...	265	Kingham Trailer Co., Inc.....	260	T & H Mfg. Co.....	262
Carter Carburetor Corp.....	263	Kinneer Mfg. Co., The.....	263	Teleoptic Co., The.....	116
Casite Corp., The.....	91	Koppers Co., Amer. Hammered P. R. Div.	201	Texas Co., The.....	4-5
Central Equipment Co.....	106	Lamson & Sessions Co., The.....	251	Thermoid Co.....	205
Champ-Items, Inc.....	236	Lee Co., K. O.....	255	Thompson Products, Inc.....	163
Champion Spark Plug Co.....	9	Lempco Products.....	257	Thornton Tandem Co.....	162-173
Cities Service Oil Company.....	177	Libbey-Owens-Ford Glass Co.....	237	Tide Water Asso. Oil Co.....	154-155
Clark Equipment Co.....	137-138	Lindsay & Lindsay.....	73	Timken-Detroit Axle Co., The....	10
Cleveland Pneumatic Tool Co., The	200	Lipe-Rollway Corp.....	202	Timken Roller Bearing Co.....	145
Continental Motors Corp.....	207	Lisle Corp.....	253	Tinnerman Products, Inc.....	196
Continental Steel Corp.....	258	Loney Co., Harley C.....	256	Titeflex, Inc.....	143
Cooper Corp., The.....	182	Long Mfg. Div., Borg-Warner...	161	Tobin-Arp Mfg. Co.....	254
Crescent Co.....	264	Lubri-Gas Laboratories.....	174	Toledo Steel Products Co.....	86
Cummins Engine Co., Inc.....	1	Lynch Manufacturing Corp.....	176	Trailer Co. of Amer.....	242
Curran Corporation.....	259	McCreary Tire & Rubber Co.....	172	Truck Equipment Co., Inc.....	167
Curtis Pneumatic Machinery Div., Curtis Mfg. Co.....	263	McKay Co., The.....	194	Trucktor Corp., The.....	147
Dart Truck Co.....	258	Mack Trucks, Inc.....	180-131	Tuthill Spring Co.....	265
Dayton Rubber Mfg. Co.....	229	MacMillan Petroleum Corp.....	214	Tyson Bearing Corp.....	233
Dayton Steel Foundry Co., The...	219	Magnus Chemical Co.....	244	U. S. Asbestos Div. Raybestos-Manhattan, Inc.	20
Delco-Remy Div. GM.....	30	Mansfield Tire & Rubber Co....	152-153	U. S. Rubber Co.....	31-140-194
DeLuxe Products Corp.....	258	Maremont Auto. Prod., Inc.....	256	Valley Electric Corp.....	262
Detroit Diesel Engine Div. G. M.	197	Marion-Herrington Co., Inc.....	181	Valvoline Oil Co.....	135
DeVilbiss Co., The.....	264	Marquette Mfg. Co., Inc.....	126	Van der Horst Corp. of America..	208
Diamond T Motor Car Co.....	85	Marvel-Schebler Carburetor Div..	261	Velvac, Inc.....	260
Dill Mfg. Co., The.....	170	Mauston Corp., The.....	257	Vickers, Inc.....	97
Dodge Div. Chrysler Corp...2nd Cover		Meehanite Research Institute....	263	Victor Mfg. & Gasket Co.....	183
Dole Valve Co., The.....	259	Michiana Products Corp.....	262	W. G. B. Oil Clarifier, Inc.....	265
Do-Ray Lamp Co.....	249	Micro-Linor Service Corp.....	261	Wagner Electric Corp.....	146-225
Duplex Truck Co.....	264	Mid-Continent Petroleum Corp...	117	Walker Mfg. Co. of Wis.....	21
Du Pont de Nemours & Co., Inc.	206-216-251	Midland Steel Products Co.....	77	Walter Motor Truck Co.....	233
Duro Metal Products Co.....	211	Mid-Western Auto Parts.....	259	Ward LaFrance Truck Div., Great American Ind., Inc.....	231
Eberhard Mfg. Co. (Div. of the Eastern Malleable Iron Co.)...	147	Miley Co., L. J.....	132	Warner Electric Brake Mfg. Co.122-123	
Edison, Inc., Thos. A.....	124	Miller Mfg. Co.....	261	Waukesha Motor Co.....	262
Edwards Iron Works, Inc.....	134	Miller Tires.....	15	Waverly Petroleum Products Corp.	188
Elastic Stop Nut Corp. of America	187	Milwaukee Dustless Brush Co...	178	Weatherhead Co., The.....	27
Electric Auto-Lite Co., The.....	13-99	Mohawk Rubber Co.....	263	Weidenhoff, Joseph, Inc.....	212
Electric Heat Control Co., The.....	257	Monmouth Products Co.....	264	Wellman Co., S. K.....	195
Electric Storage Battery Co., The.	71	Monroe Auto Equipment Co.....	107	White Motor Co.....	67
Empire Electric Brake Co.....	161	Moog Industries, Inc.....	254	Whitehead Stamping Co.....	261
Ethyl Corp.....	23	Morse Chain Co.....	24	Wilcox Rich Div.....	2
Evans Reamer & Machine Co.....	259	Motor & Equip. Wholesalers Assn.	210	Wilkening Mfg. Co.....	12
Everhot Products Co.....	128	Motor Economy Products, Inc.....	175	Willard Storage Battery Co.....	228
Federal-Mogul Service.....	68	Motor Master Prod. Corp.....	175	Winslow Engineering Co.....	256
Federal Motor Truck Co.....	103	National Auto Parts Assn.....	262	Wiry Joe.....	264
		National Wheel & Rim Assn.....	215	Wittke Mfg. Co.....	69
		New Britain Machine Co.....	109	Wix Accessories Corp.....	129
		New Process Gear Co.....	156	Wohler Corp.....	260
		Niehoff & Co., C. E.....	189	Wolf's Head Oil Refining Co., Inc.	230
		Oakite Products, Inc.....	250	Yankee Metal Prod. Corp.....	184
		Ohio Piston Company.....	234	Zollner Machine Works.....	239
		Oshkosh Motor Truck, Inc.....	23		

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EDITORIAL CONTENTS

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FEATURE ARTICLES

Filter Cartridge Diagnosis	38
Tight Tire Situation May Last Rest of Year	40
Truck & Bus Statistics Compiled by ODT	41
Saving 2 Hours on Ford Camshaft Gear Replacement	46
Formulae for Selecting Tractors	48
Determining Causes of Radiator Overflow	49
The Role of Trucks in The Invasion of Europe	53
Valve Face "Mike" Doubles Valve Life	54
Possibilities of Gasoline Engine Development	56
Tips on Diesel Engine Maintenance	60
War-Born Troubles Curbed by War PM	62
Cylinder Head and Engine Block Repair	64
Profile of a Mobile Maintenance Unit in France	66
Highway Trailer Models Includes Innovations	154
WPB Lays Plans to Revoke Production Controls	214

DEPARTMENTS

Washington Runaround	35
Editorials	37
Shop & Salvage Hints	42
The Gripe Department	50
Free Publications	58
New Products	59
CCJ Quiz	69
CCJ Newscast	76
ODT News	166
OPA News	170
WPB News	174

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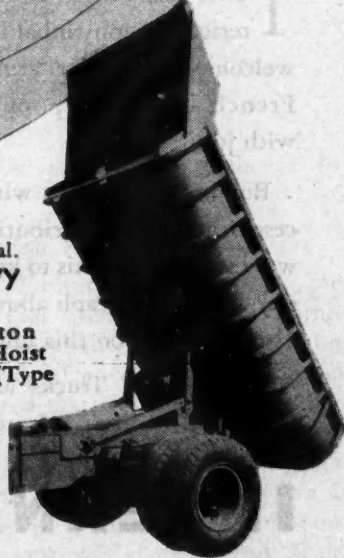
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On the job after Tunis fell...



SIGNAL CORPS PHOTO

When Civilian Supplies were Essential

TUNIS FELL May 7, 1943. Newspapers said: "Hysterically happy inhabitants by tens of thousands welcomed the allied armies. Heedless of danger, French and native populations literally danced with joy."

But joy doesn't last without food and other necessities. Prompt distribution of supplies to civilians was essential at Tunis to keep order and assure security. The photograph above shows an International Truck at work on this important job.

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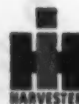
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COMMERCIAL CAR JOURNAL

Vol. LXVIII, No. 2 October, 1944

ODT Plans V-Day Action

The Highway Transport Department of the Office of Defense Transportation is formulating plans for relaxing wartime controls on truck operators which will reflect Allied fortunes in the war with Germany and Japan. The department's aim is to effect an orderly, intelligent relaxation of controls. It will strive to avoid a chaotic return to unrestricted truck operation. Division heads and section chiefs have been asked their views. Suggestions have been made to truck operator groups that they give some thought to the matter.

Current Thinking

In formulating V-day plans, the principle task is to determine the relative importance of the various conservation orders and regulations, and then to revoke the least important first. At the moment, conservative thinking envisions a plan for V-E day (when war ends in Europe), when certain controls would be removed, and another plan for, say, V-J day (when war ends with Japan), at which time the remaining controls would be revoked. There is a possibility that only one plan will be formulated, to take effect with the defeat of Germany, under which restrictions would be removed piecemeal but over a period which would take into consideration the size of production cutbacks by the military and the time it would take truck manufacturers and tire manufacturers to get back into large-scale civilian production.

50% Military Cutback

The WPB is busy with its own re-conversion plans and these are reported in a separate article in this issue. It is certain that the cutbacks of automotive military production will reach at least 40 per cent. One

ODT Plans V-Day Action . . . 50% Military Cutback . . . Gasoline Plentiful . . . 105,000 Heavy Tires . . . 7500 Trucks Down . . . ODT Gives Job to OPA . . . Loophole for Operators . . . Issue Over Gas Appeals . . . Palace Revolution . . . Etc.

by **GEORGE T. HOOK**

reliable informant told this department that it would exceed anything that has been publicly announced so far. He kept nodding to suggested percentages until they exceeded 50 per cent and then the suggestor became embarrassed at his own impudent persistence and stopped prying. Even a cutback of 40 per cent will release a vast amount of materials, manpower and productive facilities and it is expected that such automotive orders as the limitation on parts and shop equipment and all types of trucks and trailers will be revoked. Practically all of the material conservation orders will be revoked. A few

covering strategic materials are expected to be liberalized.

Gasoline Plentiful

In Washington the opinion prevails that when the war in Europe ends "gasoline will be running out of our ears." One well-posted informant declared that right now we are in a better position with regard to gasoline than at any time since the war began. Many more tankers are in coast-wise service; building of tankers is currently at the rate of 28 per month; sinkings are negligible; pipeline, barge-line and rail tank-car deliveries are up (Next page, please.)

